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armies / by Robert Jackson, M.D.**

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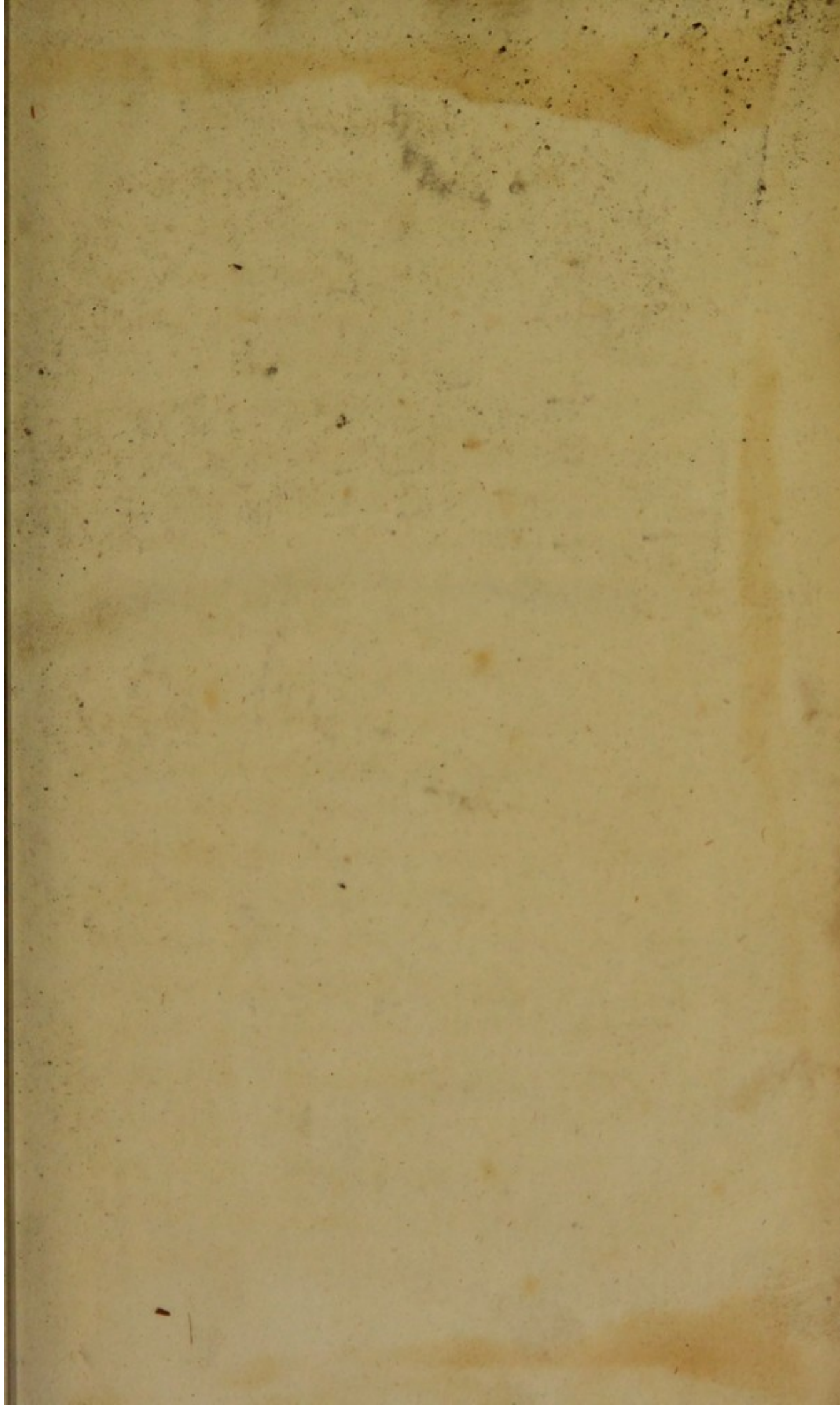


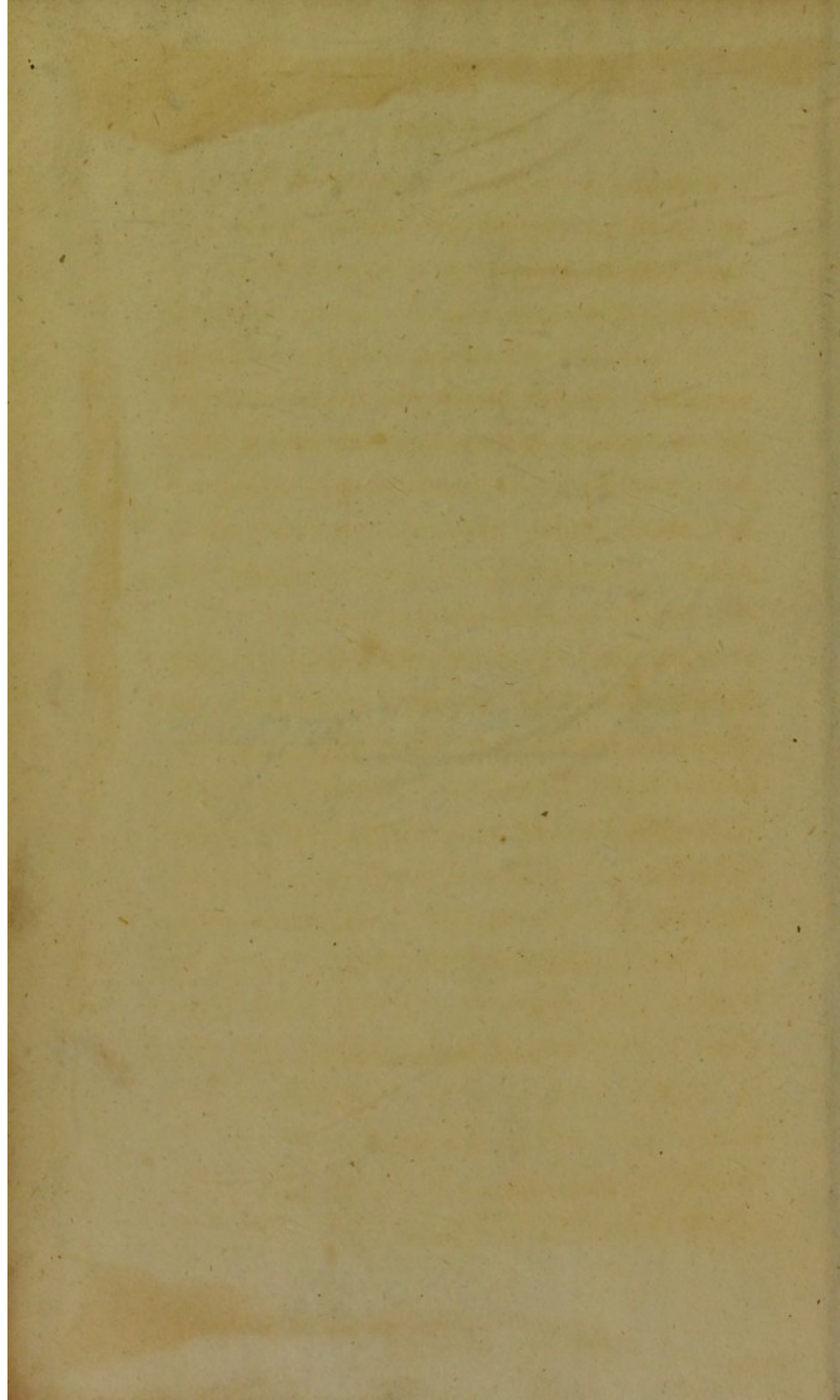
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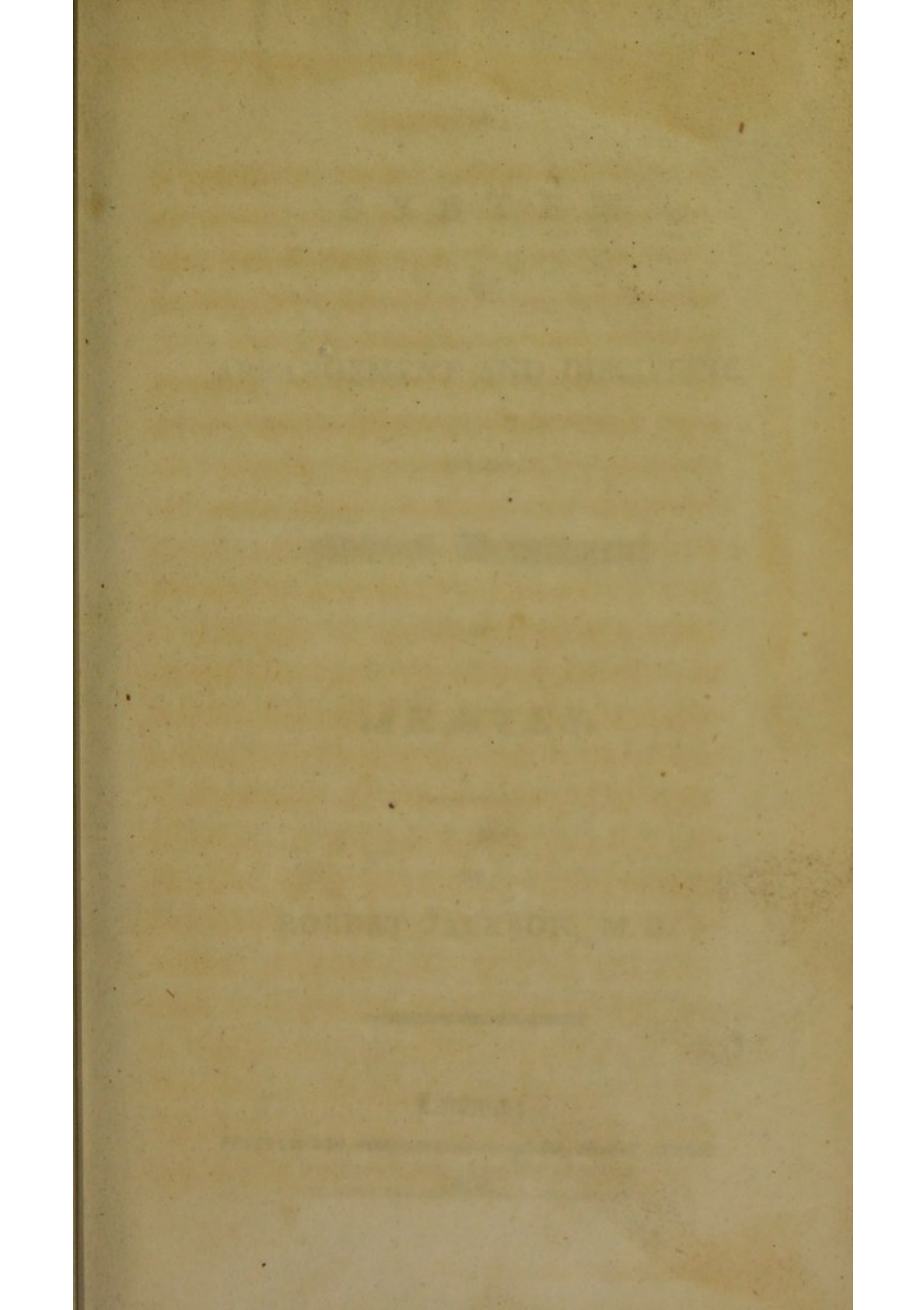


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A
S Y S T E M

OF

ARRANGEMENT AND DISCIPLINE,

FOR THE

Medical Department

OF

ARMIES.

BY

ROBERT JACKSON, M.D.

London :

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1805.

S Y S T E M

ARRANGEMENT AND DISCIPLINE

Medical Department

A R M Y

ROBERT JACKSON, M.D.

Printed by S. Gosnell, Little Queen Street.

DEDICATION.

To the medical Officers of the British Army.

GENTLEMEN,

IMPRESSED with a high sense of the importance of the station which you occupy in the military fabric, and impelled by a strong desire of contributing my aid to render the execution of your functions, in that important station, less difficult than it now is, I have undertaken the adventurous task of exhibiting a systematic plan of medical arrangement for the use of armies. It is now finished, and I present it to you as it is,—useful I hope, though not free from imperfections.—I have endeavoured to explain the principles of the arrangement explicitly: in the opinion of some I may, probably, be thought to have expanded the explanation too much,—to have detailed the instructions and reasonings, on certain occasions, with irksome minuteness. If there be error on this head,

I may be allowed to say that I have fallen into it, in the idea that the junior class of your order requires to be furnished with the reason of the thing, as well as to be presented with the example of the practice:—without elucidation from this source the preceptive rule, as proceeding from an obscure individual, would not be presented with such credential as commands the requisite attention.

In dedicating the present work to the medical officers of the British army, I am sensible that there are several among you to whom I am not able to impart information, many to whom I would not presume to offer instruction: there are others, (and in the extensive medical staff of the present times they are not few in number,) who require, and who, it is believed, will not be unthankful for the suggestions of an honest guide in a perplexed path, though he be not a guide of the first rank and distinction. The process of attaining medical knowledge is tedious, and the period of man's life is short; consequently time is precious. This, as you know, is a remark of the venerable Hippocrates; the truth of it is confirmed by the observations of every day. Con-

vinced of it by my own experience, during a life of vicissitude which has furnished considerable opportunities for observation, I am led to believe that my attempt, feeble as it is, to abridge your labours, to smooth the direct road, and to bar the bye paths in which you might be seduced to wander till the best part of your days are past, will not be despised by such of you as are yet young in the service, and desirous of learning your duties with the least possible expence of time. With the expectation of facilitating your progress in this pursuit, the system, now submitted to consideration, presents the material points of information and instruction in as clear a view as possible. No seducing speculation is indulged, and no opinion is advanced on mere theoretic grounds. The practices, recommended, are such as have been tried and verified in experiences often repeated; the road is thus simple and the rule sure. The plan, calculated to unite principle with practice, to elucidate facts by reasonings, and to confirm reasonings by facts, may not I hope altogether fail in leading young men to a knowledge of their duties by a shorter road, and with less trouble

than I have myself bestowed on the subject. If I am successful in this point my labours will be rewarded; and the toilsome task I have gone through will be reviewed with satisfaction. I am conscious that I have discharged a public duty honestly and independently, but I shall have cause to rejoice if I have done it usefully.

When you view your situation with care, and estimate the value of its relations justly, you will see cause to consider your station as an important one in the military fabric: others it is to be hoped will also see it in this light. It is scarcely necessary to repeat that which every man of common reflection must have remarked, viz. that the art of preserving health and curing disease is one of the highest offices of a created being: it penetrates deepest into the recesses of nature; and, as such, it is one which implies the greatest exertion of human talent. But venerable in itself, and dignified in its functions properly exercised, it sinks in character, and becomes insignificant in value, when converted into a trade cultivated for the sake of pecuniary gains. Your daily observation informs you that the thirst of money has

retarded or arrested the progress of your art : it has comparatively stripped it of the veneration due to its original character as a work of charity and kindness. It is easily comprehended how the study of the science must be neglected, where the pursuit of the physician is gain of money. From this pursuit your condition is exempted, and you have cause to rejoice on this account. It happens fortunately for yourselves,—it is to be hoped that it happens yet more fortunately for mankind, that the bait of fortuitous gain does not attach to your station. Your salary is a provision against want; the chance of accumulating wealth is not in your course; if it were, it would mar your progress in the road to knowledge. This will be considered as the language of a visionary: it is notwithstanding true. Your just object of pursuit is higher than that of pecuniary gains; but it is not pretended, in speaking in this manner, that you are insensible to the charms of the eminent station. The military physician is admitted to possess the desire of rising to distinction like other men; but, that his distinction may be permanent, he must be led to consider that the rank and distinction, attainable in his circle,

follow as an appendage of knowledge; that knowledge, in his art, can only be gained by labour and a long course of experience;—it is not to be conferred by patent, in the appointment to a high office. As your elevation to the highest rank depends on knowledge; and, as knowledge is gained by labour, it is incumbent upon you to work diligently in the early part of life;—it is the duty of your seniors to give you all possible aid in your course. Your office is honourable, but it is more arduous than that of any other class of men. The soldier gains his point when he has made himself superior to his enemy; the lawyer when he surpasses his adversary in acuteness of wit and argument. It does not follow necessarily that either the soldier or the lawyer stand on a high point of eminence; they are perhaps only above those who are low. The ground assumed by the physician is different: his contest does not lie with men like himself, but with the things of Nature; and the powers of man do not aspire at a superiority over Nature. They are qualified to observe her movements, to direct her actions into different channels or organs of the system; but they do not possess such power of control as

to arrest progress arbitrarily, or force her to retrace her steps:—this implies the subversion of life. The physician's task is not only delicate;—his position is awful. The animal machine, which is the subject of his experiment, is a complicated structure, consisting of many parts, or different circles of peculiar organization, variously and curiously but often darkly connected with each other. The foundations of movement are thus different in their laws according to their original constitution: they are also modified differently, or they display their action under a great variety of different forms, the just calculation of the value of which implies a habit of nice discrimination, which can only be supposed to arise from a long course of minute attention. The fundamental object in the physician's art consists in directing the deranged movements of the animal body to reassume the channels of health; but, as the machine is complicated, the movements are various in themselves and the means are necessarily different. The movements must thus be estimated correctly, in order that the means may be so applied as to effect the purpose with security. This is easily said, but it is not easily done.

The forms or figures of action in the physical powers are radically different in different diseases; they are subject to complication and a variety of shade in different subjects suffering under the same radical disease. All these require notice, and they all are to be considered as dubious lights which occasionally lead the unexperienced astray, so that the physician can scarcely ever say that he has learned his art. There is thus labour and difficulty in learning; and there is moreover little of that which is learned, beyond a general principle, which can be communicated intelligibly to others. Physicians must, therefore, be taught to believe that the bedside of the sick is the only safe school, which furnishes the true lights of knowledge for the treatment of diseases.

In throwing your eye cursorily over the history of medicine, it will not be easy for you to mark the progress, and to estimate the advances which have been made in the healing art for these last two thousand years. The structure of the human body is more correctly known now than it was in the days of Hippocrates, both in its healthy and diseased condition. As such, the just ground of

successful practice in the treatment of diseases may be supposed to be more securely laid ; but, though this be so specious and promising, yet, if the effect be examined in the results of history, we shall find some hesitation in determining on which side to place the balance of the account. If there be no great difference in the two cases in actual effect, (the question here regards the treatment of acute disease,) we shall be inclined to suppose that the accessions of light have not always been directed to illuminate the true path. It cannot be said that the medical genius is dormant or torpid: on the contrary it is remarkably active; but it seems often to stray into devious channels, terminating in productions of theoretical delusion, which, differently modified, vanish and re-appear successively like shades in a phantasmagoria. The motive which prompts a physician to produce a new theory is often connected with a desire of distinction, frequently subservient to expectations of gain. This has barred the progress of the science; and, as this attaches to those who attempt to make a livelihood, or who expect to make a fortune by the practice of their art, that which is ingenious is pur-

sued with more eagerness than that which is true ; for ingenuity and delusion attract the notice of the multitude in preference to simplicity and truth. The medical art is thus capricious or degraded. If ever it emerge from its low condition, raising its head so as to fix its station among the sciences, it is more than probable that it will owe its good fortune to the medical officers of armies, and more likely to the medical officers of the British army than to others :—their advantages are superior. It may be observed of military physicians or military practitioners, that they have the opportunity of seeing diseases in their beginnings, of marking their daily and hourly progress, of witnessing their final terminations accurately, and without disguise. They also have the power, in all cases, of being physicians in reality ; for they are under no inducement to surrender their judgment to the caprice of a patient for the sake of a fee. These are advantages ; but they are not all the advantages or pleasures of a military physician. The military physician does not crouch to the insolent, or study the caprice of the rich hypochondriac : he does his duty to the soldier in conscience, and he does it in kindness. For this he has his reward ;

for the subjects of his care are rarely ungrateful. If he manifest kindness, and evince knowledge, he seldom fails of obtaining the regard and commanding the respect of his patient ; but his qualities must be real, not fictitious : the heart must be warm with charity, the mind firm in knowledge ; for no class of men are more dexterous in probing the rotten parts of the heart, or in unmasking the weak mind of their superiors than the mass of common soldiers.

I have spoken freely, for I consider myself as addressing the junior class of the medical officers of the British army, persons who have almost every thing to learn which relates to military life. On that ground I shall not, I trust, be accused of presumption. I am now a veteran in years, and not young in service ; and, as I have wandered over various countries in the course of my life silently pursuing my own purpose, which was the investigation of the physical condition and moral character of man, it may be reasonably expected that, with much desire of obtaining information, though endowed with no uncommon capacity of seizing it, I may have discovered

some things in my professional art, the knowledge of which may be useful to you, who are yet young in the world. If my endeavours, as now employed, be successful in fixing some just landmarks for the direction of your difficult course, I shall retire from the scene with the satisfaction of having done a good work. The instructions, which you find contained in the following pages, were digested principally with a view to your use; they are committed to your protection in the confidence, that if you do not discover all the information and instruction that you may expect or require, you will not meet with any thing which has a tendency to lead you into error.

I have the honour to be, with much interest in your prosperity, and high expectations of your progress in science,

GENTLEMEN,

Your most obedient and

Most humble servant,

ROBERT JACKSON.

P R E F A C E.

AMBITION of power and thirst of dominion, as unrestrained by a sentiment of moral right, has often deluged the world with blood. The principle is seldom at rest, or justly poised in its action, and the operation of it threatens, in the present times, to be singularly fatal,—as overturning the customary balance of things among the European nations by violence, as well as art. As the open purpose is effected by the preponderance of military force, it is obvious that such integral parts of the European empire, as yet possess some powers of resistance, can only be enabled to maintain their positions on an independent basis by the provision of a counterbalancing military force. This implies the creation of an army,—justly organized for concentration of power, correctly disciplined for the command of effect, and so constituted as to excel in quality rather

than to prevail in number. The proper organization of such instrument, and its just preparation for the purposes of war, comprehend an intimate acquaintance with the active and intellectual powers of man, in all his various relations;—the task is therefore difficult, considered as one of the highest efforts of human wisdom. As such it belongs to enlightened statesmen and military officers; men, who are capable of tracing the knowledge of military organization to fundamental principles, and, who have authority to give the principle currency in practice. The ground is thus privileged, and the author abstains from touching it; but, while cautious of intrusion on this point, he believes that he does not transgress the just limits of his office in offering information on the subject of health. The concerns of health in all its latitude belong to the province of the physician: the health or efficiency of the military instrument, in whatever manner the parts may be ordered and disposed, is essential to the success of military effect: the due consideration of it is therefore an important subject. The adjustment of means for preserving the health of soldiers, and for effecting the cure of

their diseases may be regarded as one of the first objects in an army. It is a general concern as relative to the whole; and it is reasonably supposed to be directed by the operation of a general principle; but it cannot be said to have attained this attention in all cases. If the medical department of the British army be viewed in all its extent, the fabric appears to be jarring and ill-connected. The influence of one uniform principle, indispensable for the production of a consistent effect, does not visibly pervade the hospital regulations which have been published by the army medical board, and which are acted upon by the subordinate or executive medical officers of the British army. This relates to the whole of the medical department, which as a system is visibly deficient. It is however to be observed on the present occasion that considerable improvement in arrangement, as tending to accuracy and economy, has been introduced into the management of regimental hospitals of late. There is here evident improvement; but there still exist things in the new forms more complicated than necessary, and not well according with the just constitution of mi-

litary force. There is besides no elucidation of the propriety of the rules enjoined, by the exposition of the principle illustrated by reasoning and supported by reference to fact. Such exposition might, perhaps, be thought to be necessary for enlightening and instructing such of the juniors in the department, as are appointed to execute offices which require thought and reflection. From the conviction of the existence of such defect (and it is a defect of no small importance,) the following work partly took its rise; it is intended as a remedy for an omission, —how far a successful one, others will judge.

The author takes the liberty of observing in this place that his attention was drawn to a consideration of the medical department of armies, at an early period of life. He had the opportunity of seeing how things moved according to the customary forms of discipline; and he was furnished occasionally with the means of trying how they were capable of moving according to other modes of arrangement. This was seen and tried in varied services and in different climates; but, as the views,

which arose on the subject, are the result of direct experience, so they do not correspond exactly with those which now obtain. They may appear to be innovations; but the author believes that they are correct in principle; and he is warranted to say that he has had the conviction of multiplied trials that they do not fail in practice. Impressed with an opinion of their importance, he conceived that a digested view of medical arrangement, as arising from experience in a course of years, in different conditions of service, promised fair to be useful to the public if adopted generally and applied effectively to the purposes of the national troops. In this belief he proceeded to arrange his materials so as to form a digest, or system of arrangement and discipline for the medical department of the army. The motive which prompted the design is pure; the purpose disinterested; the rule of execution unreserved. But, as the author was aware that motives are not always fairly interpreted, and, as the idea of offering something new implies the supposition of error existing in that which obtains, he thought it proper that an opportunity should be furnished to the confiden-

tial officers of the state, of examining statements, of ascertaining truths, and rectifying abuses in silence,—or without such exposure of facts as the formal publication of a book demands. Such rule of conduct his sense of duty commanded; and in prosecution of this impression, he intimated several months ago to the Chancellor of the Exchequer, (whom he conceived to be the proper organ of communication on this occasion, as being the first minister in his Majesty's councils, and the immediate steward of the national treasure,) that he (the author) had arranged a plan of medical management for the use of the army, which, he was ready to submit to the examination of such persons as the Chancellor of the Exchequer might direct; supposing such to be persons competent to judge of the practicability and efficiency of the plan. If the value of the plan was tried and ascertained, the public might thus reap the benefit of the suggestions in the full extent, as rendered master of the power of applying them in practice after the manner that might seem most suitable. It was stated in this notice, communicated in a letter addressed to Mr. Pitt and left at his house in

Downing Street, that two thirds of the means provided for the uses of the army employed on foreign service, especially during the course of the late war, was positively superfluous, as exceeding the just wants of the occasions,—the proofs incontrovertible. As Mr. Pitt did not deign to acknowledge the receipt of the letter, even by one of his under-secretaries, the author, left without any official instruction respecting the most eligible mode of applying the fruits of his labours to the public benefit, felt himself under the necessity of putting his manuscript into the hands of a printer; for, with the conviction that two thirds, even with the conviction that one third of the means prepared for the use of the medical department of the British army, might actually be saved to the state, he would have deemed himself culpable to the nation had he withheld his communication.

Such is the cause of publication; and if the mode adopted be not the best that existed of rendering the informations useful, it is to be remembered that it is the only one which was left in the author's choice. The work would not

have been presented to the world in its present form, if the public purpose could have been attained otherwise; for, as the office of exposing errors, in the existing system of management, is an ungracious task, it is such as it would have been desirable to avoid. But, as the information contained in the following pages is correct; as it arose in the course of public service; and, as it appears to be important in its nature, the author thinks himself bound in conscience, as a matter of duty, to submit it to the public, for the public judgment. He has not, he believes, proceeded farther in exposing error than the necessity of establishing foundations of truth commanded; and, if he has alluded to medical officers personally in the course of his investigations, the rule of conduct pursued by such persons in arranging the duties of a public station, made it unavoidable. Such liberty, though exercised towards superiors, will not be deemed insubordination: the subject implies a national concern, which is open to investigation on national grounds.—The work relates principally to two points, viz. information to those who act in the higher offices

of the state, as relating to the principles and truth of matters which concern the general arrangement of the medical department of the army; and, instruction to the junior class of medical officers, who are appointed to conduct and execute the medical duties in detail.

The author is aware of the delicacy of offering information to the higher officers of the state. The advice, though true and well intended, may be construed into an insult, as implying an oversight in men who are supposed to see all, and who are competent to judge of all. The expenditure of means, ordered for the use of the medical department of the British army during the late war, was enormously great; and it cannot be supposed that the amount was unknown to the Chancellor of the Exchequer; for, as it was included in his estimates, it was necessarily brought under his observation. This being so, it is humbly suggested that, while he viewed the estimates and furnished the authority for the provision of the means, as prime minister, he might have been expected to have exercised a power in forming opinion concerning the

propriety of the application. It may be alledged that the prime minister, not being a medical man, is not competent to judge of the just expences of the medical department. Such is only a superficial excuse. The first minister of a nation is supposed to know the force, and to measure the duties of the principal engines of the state; and, though it be admitted, that it requires medical skill to stop the progress of a disease, it is obvious that it only requires experience of business and common sense to estimate the proportion between means and effect, or between labourers and their work in military hospitals. This is demonstrative where the materials are duly classed, arranged and exposed to view properly contrasted. It is possible, and it is partly the object of the following system, to exhibit the medical business of armies under such forms of order that every man of common sense may be enabled to see, and judge of the quantity of duty which a medical officer performs or ought to perform, and of the quantity of medicines required for the cure of a given number of sick. If the fundamental points be accurately established, the rules rigidly adhered to in practice, the process moves cor-

rectly in all its parts, the causes and effects being so balanced with each other that imposition cannot exist, or error escape undetected. If it should appear that two thirds of the medical officers of the hospital staff were not adequately employed during the late war, or that two thirds, or more than two thirds of the medicines, ordered for the use of the forces destined to act in foreign parts, decayed or perished in store before there was an opportunity of applying them to a purpose, (and it requires no professional skill to ascertain the truth of this supposition,) it will be admitted, under the most favourable construction of the case, that there had been neither a previous just calculation, nor a subsequent examination instituted by higher powers for the purpose of estimating statements and correcting errors. The whole business of the department had thus the appearance of being ordered at random, and of passing without control. Such practice marks profusion; and if profusion lead to ruin, as the testimonies of human history prove in every instance, the apparent waste, manifested in the management of British military hospitals during the late war, demands a rigid examination. If

the case supposed be the case in fact, a rigid restraint becomes indispensable; but, before this can be instituted on just grounds, it is necessary that those, who are appointed to superintend the official operation in all its parts, be correctly instructed in the knowledge of things according to their true value. Such is partly the intention of the following work: the execution may be defective; the design is secure from blame.

The subordinate, or professionally instructive part of the work comprehends details which may be useful to the junior class of army medical officers; and it is offered with some confidence of being acceptable. The rules have been tried and faithfully proved;—as such, they are entitled to credit. The author has attempted to unfold the reason of things; and, by so doing, he expects to be able to entice young men to turn their thoughts to the subject of their duties. This is important; and it will be useful, whether the thoughts move in the same channel with his or not. With the view of encouraging the exercise of the thinking mind, the details are

extended, even repeated under different forms, and in a manner that may be considered as tedious and irksome by those who are not immediately interested in the subject. And, as some things may be deemed superfluous, so it may be added that little is now presented which has the chance of affording amusement to the indifferent reader: it is not even improbable, but that persons of a morbid delicacy of organs may be offended with the abruptness of the manner. The author has spoken with confidence where he was sure of fact; but he has endeavoured, as far as his means went, to ascertain the fact correctly. The difficulty of obtaining official documents will be held as an excuse for the want of precision in some matters of calculation: the points undetermined are, however, such as may be ascertained by those who have authority to investigate official transactions; and, wherever the precise fact has not been attainable, the supposition, it is presumed, will always be found to rest on safe grounds. If errors occur in reasoning, or oversight in accuracy of statement, the author will receive correction with thankfulness,

and information with pleasure; but if censure be offered by the critic, let the critic remember that it is due to the public that he support his assertions by argument, that is, by reason and fact, fully and clearly demonstrated.

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ERRATA.

- Page 21, line 24, *for* ably managed, *read*, manageable.
 ib. — 26, *for* or, *read*, as.
 29, — 21, *after* brigade, *insert* a comma.
 80, — 3, *read*, armies, they.
 101, — 28, *for* on, *read*, in.
 113, — 29, *for* exists, *read*, exist.
 133, — 19, *for* part, *read*, parts.
 147, — 17, *for* aids, *read*, aid.
 313, — 17, *after* or, *add*, who.
 317, — 6, *after* symptoms, *add*, or they were.

Directions to the Binder.

The folios at the top of each of the separate Tables will shew where they are to be placed.

CONSTITUTION
OF A
MEDICAL STAFF.

CHAPTER I.

*An Outline of medical Arrangement for Armies, viz.
Constitution, Qualities, Number, Rank, and Pay,
of a medical Staff for a given military Force.*

THE health of civil society is strictly speaking a national concern; but the views of mankind are so limited, the motives so selfish and interested, that there is little expectation of its soon obtaining a national care. The proposition of an arrangement, calculated for the purpose of preserving and restoring health on national grounds, would probably be treated as visionary, the idea ridiculed as a rider to Plato's republic; its execution must therefore be left to happier times, when benevolence opens its circle to the whole human race; the following view is calculated for the occasions of the few; its advantages are demonstrative, and it scarcely can be supposed that it will not meet with attention; for the care of the health of the

Reasons
command-
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health in
military
life.

military body, a part of society allotted to a specific purpose of active operation, in which vigour is the main hinge of effect, cannot be supposed to be disregarded by men of common sense who are intrusted with the command of armies. The military commander, who considers the soldier as an instrument with which he is destined to perform important offices, must naturally desire to possess the instrument in its highest possible state of perfection. This cannot be the case without the possession of vigorous health; and health cannot be ensured in armies without the practice of health regulations, precise and systematic in all their parts. The nature of man, constituted with a tendency to expand the sphere of its action, is liable to overstep its just bounds; experience proves daily that it is prone to aggression: provisionary of this contingency, independent nations possessing foresight and reflection, particularly European nations in modern times, have been led to adopt the expedient of establishing a standing military force, expressly for the purpose of preserving a balanced action with such of the neighbouring people as present themselves in hostile guise. The purpose of precaution is important; but the object will not be justly attained in execution, without accurate attention to the preservation of health, and active exertion in the speedy removal of disease where it happens to occur.

A standing army may be considered limitedly as the property of the executive government of a kingdom ; considered as property, it becomes the interest of the executive to husband its expenditure. If the question be viewed in this light, and, if the decision be left to the test of experiment, the result of experience proves decidedly that it is more economical of money, and more effective of purpose to preserve an army efficient for action, even by an expensive health establishment, than to fill up its ranks by a levy of new subjects, when its parts have failed by disease, or when they have been disabled by accidents in war. The reason is plain : if military materials were abundant, and even cheap, the veteran soldier, cured of disease, or recovered from wounds, is ordinarily of more value than the newly-raised recruit, inasmuch as he is more hardy in body, more instructed in his art, and more confident of his military powers. If this be so, and no man of military experience will attempt to deny it, it becomes a rule of radical wisdom as a measure of economy, independently of many considerations on the score of humanity, to husband the lives of soldiers by the best attentions to health which the medical art commands.

The moderns have a claim to praise, in their arrangements for the preservation and technical care of the health of armies, over the most en-

Care of health in ancient and modern times.

lightened of the ancient nations. The Greeks and Romans, the most warlike and renowned people of former times, appear to have been deficient in medical and surgical provisions for the use of their troops. Surgeons, who were military captains, accompanied the heroes of Greece to the siege of Troy. Physicians, as a separate class, were not present in that expedition. In the emerging and semi-barbarous stages of society, where the sphere of natural knowledge is limited and the views are frequently incorrect, the occurrence of disease is usually considered as the infliction of punishment for offences committed against Heaven: in such case, the intercession of the priest is deemed a more powerful remedy than the skill of the physician. The reign of superstition, which is only banished from the world by the reign of philosophy or true religion, obtained in the earlier periods of society; its predominance may be supposed reasonably enough to aid in accounting for the neglect of the technical part of the medical art in civil society, consequently, for the slower introduction of rational medicine into the fabric of the military system.

But, though the influence of superstition was probably a cause of the slow progress of this beneficial art in civil and military life, it may be presumed that there were other causes which kept the profession in the back ground, as relative to

the great operations of war. The subject is obscure; for the notices, respecting the disposition of military sick and wounded, are very defectively stated,—passed over in silence by historians, even very cursorily mentioned by professional writers on the military art. When the art of healing had made some progress on a scientific basis; and, when professed physicians, acknowledged to be persons necessary for the cure of diseases, actually accompanied the armies of the Greeks in their wars in distant countries, the useful information, respecting the mode according to which their duties were conducted, is still imperfect: no specific detail of medical duties, comprehending the rule of management instituted for the care of the sick, is left distinctly on record in any of the historians of the Greek nation which have reached the present times, at least which have fallen into the hands of the author.

The Romans, so wise in their regulations, and so exact in their military discipline, appear, as well as the Greeks, to have been negligent on this head. The Roman conquests had spread wide before the medical art, as practised by men of science, was admitted into the Roman state. It was probably undervalued by the Roman soldier in the virtuous times of Rome as an art calculated for the effeminate and feeble. But, though undervalued in the beginning, it found its way

into the capital at last: it spread among the inhabitants with rapidity; but, in what manner and to what extent it was admitted and practised among the troops, is not precisely known. Vegetius, who lived at a late period of the Roman empire, and who wrote on the military discipline of the Roman armies, did not think it worth his while to detail the medical arrangement adopted for the care of the troops with any satisfactory degree of minuteness. If the arrangements, adopted for the care of the sick and wounded, were not detailed and noticed by a professed writer on a military subject, it may reasonably be supposed that the usefulness was not highly esteemed. This seems to have been, in fact, the case: it is the opinion of Vegetius, the doctrine of the generals of ancient Rome. Temperance of living and exercise in arms had been observed from the earliest records of the world to be the best preservatives of health. A maxim was formed on this basis;—and it was fully appreciated in the Roman armies. These, it is commonly known, trusted more to the effects of this maxim in the days of their vigour, than to the skill of their physicians. There is reason to believe that the Roman armies were usually healthy; and the ordinary good health is fairly presumed to be a consequence of perseverance in regular and impressive discipline. But, though healthy in general, it is also known that sickness occurred sometimes;

and it is known, that, in some instances, it committed great destruction. In what manner the sick were distributed in such cases, and how they were arranged, for the convenient application of medical aid, is not clearly understood. In the latter times, the sick of a legion seem to have been collected under one tent, constituting what may be termed a field hospital; the inspection and good order of which, as well as of all the economical concerns of the encampment, were placed under the immediate superintendence of an officer denominated prefect of the camp. Physicians and surgeons were present with the Roman armies in these later times; they were then esteemed useful and necessary for a variety of subordinate purposes. Habits of luxury and debauch had rendered the bodily frame irritable, and the health precarious: hence, the presence of physicians with armies was deemed an indispensable provision of war: but, though present in the field, it is not known in what rank the medical officer stood in the Roman armies; how he was salaried, and what was the outline of his duties. If he gave advice to the sick, or afforded manual assistance to the wounded, the other parts of the care would seem in many places, particularly in earlier times, to have been a tax imposed upon the neighbouring people, or a duty assumed by the patriotic and humane of the Roman state. This may be inferred from a passage in the Annals of Tacitus,

CONSTITUTION OF A MEDICAL STAFF.

who observes, "that after the accident at Fidenæ, the houses of the chiefs were laid open, medicines and medical assistance every where provided, the city, for the time, though clothed with a countenance of sorrow, furnishing a picture of the practice of the early ages, when the Romans maintained with liberality, and nursed with care, those who had been wounded in the great battles of the country *." This refers to a common custom in early times; and, if this was the custom, and usual dependance of the Roman armies for the care of sick and wounded, the war arrangement was incomplete; inasmuch as a blank was left in the system, which was not so constituted in the case supposed, as to move with its own means through all circumstances of service.

The Saracens, who were the successors of the Romans in power and reputation, cultivated medical science above most other arts. They were enamoured with the culture of medical science nationally; it is almost a natural consequence to suppose that they were attentive to the health of their military force. It appears, indeed,

* Cæterum sub recentem cladem patuere procerum domus, fomenta et medici passim præbiti: fuitque urbs per illos dies, quamquam mœsta facie, veterum institutis similis, qui, magna post prælia, saucios largitione et cura sustentabant.

TACIT. Ann. lib. iv,

in their history, that the health of the military force was considered as important in the eye of the Saracen people. It is not now known precisely in what manner the purpose was conducted with a view to preserve health, nor what were the arrangements adopted for the care of the sick when suffering under disease. The Saracens undertook great and distant expeditions; consequently it may be believed that their armies attained a certain degree of perfection in organization and discipline, as an effect of foreign service. The arrangements, for the care and treatment of their sick, were apparently better digested than in the armies of their predecessors; they were probably far from being perfect, according to the ideas which are now held on the subject of hospital management. The Saracen sick and wounded were collected in the rear of their armies,—in places of security; they were professedly furnished with medical and surgical assistance in regular form; and, in this instance, there was afforded an example, and perhaps the first example, of military hospitals.

In feudal Europe, when military service was temporary, and when the authority of chiefs extended only to the accomplishment of limited objects, the concerns of health were little regarded on general grounds: when the work was finished the instrument was thrown aside. It was in most cases considered only as a borrowed tool;

and, as such, it was not always tenderly used when accidents rendered it unfit for its purposes. The chiefs had their physicians and their surgeons; the mass of the people were destitute of medical help. When sick or wounded, they sought relief from the charity of the religious orders: it was rarely provided by the wisdom and humanity of the warlike leaders, as chiefs of the state.

Causes
suggesting
economy.

When the common people rose into importance by a change in the mode of warfare, or when, emancipated from feudal chains, they acquired the power of disposing of their persons; their value, and the means of ensuring their permanent military services, began to be estimated on juster grounds: a species of necessity then produced economy. Those, who, possessing feudal authority, levied recruits by conscription, as well as those, who were obliged to purchase at the market with their money, perceived, in striking the balance of accounts, that something was gained by taking care of the health of the soldier. It was discovered, in applying the investigations of science to the subject, that the object was in part accomplished by arranging a system of medical management for the cure of the diseases which prevail in armies. The institution of standing armies, a measure calculated to preserve the balance of power between hostile nations, may be considered as the

source which dictated the idea of forming a systematic plan of medical management for restoring the health of troops, as deranged by the effects of disease, or the accidents of war. Such plan of medical management now exists in most countries of Europe. The perfection, which it attains, is in proportion to the experience and knowledge of those to whom the task of forming the arrangement is committed; the effect in practice, in proportion to the zeal and ability of those who execute. The utility of such institution is demonstrative to the apprehension of every man's common sense; but, though obviously useful in its constitution, it will only, as already observed, prove beneficial in its effect, in proportion as the general foundations are laid on sound principles, and as rules, so established, are diligently executed in practice in all their parts.

To investigate the nature of causes, and to ascertain the solidity of the principle employed in directing and regulating the movement of the health department of armies, in the view that the operations may be uniform in all cases, and extensively useful in their ends is an object of important national concern: it demands the best attention of the higher officers of the state; and it is hoped it will obtain it. The subordinate parts, implied in this arrangement, are numerous; but it must uniformly be borne in mind, in proceeding

to lay the foundations of the institution in view, that, as the constitution of a military medical establishment, in order to be efficient, must be simple in its construction, and direct in application to its purpose; so nothing is to be admitted into the composition of such fabric which is not demonstratively true and eminently useful.

Medical
staff.

The preservation of health and the cure of disease constitute the primary object in instituting a medical establishment for armies. It belongs to another place to shew in what manner this object is to be practically accomplished. The sum of the first rule, which is preservative, consists in temperance of living, activity of body and mind, regulated by a knowledge of the organization and laws of movement in animal structure, as acted upon by a variety of contingent causes: the second, which is the cure of disease, depends upon the just application of medical skill. This is the ultimate object of the medical art; but, in order that the object be effectually attained, it is previously necessary that the operating means be liberally provided, constituted upon a systematic basis, and prepared with care, so as to be capable of executing all the parts of official duty with effect. The constitution of a medical establishment for armies is consequently a matter of important consideration. It consists in a proper selection of medical officers; a proper construction and equip-

ment of hospitals, or places allotted for the reception of sick ; a just arrangement of all the parts constituted for direct medical purposes, supported by a rule of correct administration in all its various details, both, as calculated for the production of precise effect and the economy of public money.

It is a primary rule in medical, as well as in all other arrangements, that the principle be simple in its nature ; without simplicity it will not be uniformly effective in its operations. In this view it is important, that medical officers be assigned to the performance of medical duties in armies, by the shortest and most direct road of application. While qualified in knowledge, it is necessary that they be equal in number to the execution of their offices ; but, while equal in number, it is of consequence that they do not exceed what is justly sufficient : if they exceed the just proportion, they become troublesome to each other by interruption ; or, they become indifferent to duty in want of an object capable of sufficiently interesting the mind. If it be a rule in war that means be applied to their ends by the shortest and most direct channels, it is equally a rule in medical arrangement that medical aid be applied immediately to arrest and rectify the first symptoms of derangement in the health of the military instrument ; consequently, that it be applied regi-

mentally ; for a regiment is the first independent part of an army *.

The mode of applying medical means regimentally is assumed in this place to be the best : it has the obvious approbation of common sense, and the testimony of every military officer's experience that it is so. If the principle assumed be admitted to be the best, the next point of consideration relates to the rule of forming an estimate of the kind and quantity of aid necessary for the medical and surgical care of an army of a given force. This may be supposed to vary in a small degree, according to the manner in which the troops are arranged by regiments or corps, or according as they are destined for service in native or foreign climates. It is considered as preliminary in all cases, that each separate or independent corps, whatever be the force of which it consists, be provided with two medical officers, in order that it may be enabled to act with its own means in the event of indisposition happening to one or other of its medical members. One surgeon and one assistant surgeon will be allowed, by every reasonable person of experience, to be adequate to the ordinary medical care of a battalion of one thousand rank and file, stationed in Europe during times of peace, whether constantly in

* See Notes, chap. I. A.

garrison, or occasionally in camp. The number stated is supposed to be the common complement of medical officers for a battalion of the force specified, stationed as alleged; but, as great benefit will evidently accrue to the military discipline of armies, if battalions, consisting of one thousand rank and file, be formed into regiments of three battalions, or, which amounts nearly to the same thing, if three regiments, each consisting of one thousand rank and file, be formed in brigade, placed under the command of a general of eminent character constantly present at his post; so, on similar grounds of reasoning, if a chief medical officer be allotted to a regiment or brigade so constituted, a similar benefit might be expected to be obtained for medical discipline, with a more equal diffusion of the blessings of the medical art than now obtains in the army. The appointment of such officer, who is necessarily supposed to be an officer of experience and professional skill, capable of connecting and binding all the parts of duty together, would be sufficient to render the proposed medical establishment of the army adequate to its needs in all common circumstances of service. It is presumed to be adequate in number; for, estimating the proportion of sick at one in ten, which is a high proportion among well-organized troops in European climates, there are provided seven medical officers for a regiment or brigade of three thousand rank and file. The care

of three hundred sick soldiers divided among seven persons, at the allotment of forty-three patients to each person, cannot be supposed to be an oppressive duty to active and capable men; and, of such only, the army surgeons must be supposed to consist. Such a portion of duty, it is presumed, would not be thought to be hard by any one: it may even be added, that did the number of the sick, on certain occasions, actually amount to one in five, the requisite attendance, in its fullest extent, upon eighty-six sick soldiers in a well-regulated military hospital, where the diseases have probably a great similarity of feature, and where several of them are probably only of the slightest kind, or such as do not require a daily new prescription, cannot with propriety be reckoned a task of hard labour to an active man, particularly as it is a task which is not likely to be of long continuance. If the arrangements be methodical and correct, the duty will be light, as the numbers now stand: if the arrangement be faulty and deficient, no increase of number will give just effect to execution.

The estimate, which is given in this place, may be considered as the estimate of a just medical establishment for a regiment of three thousand rank and file. If the number stated, viz. seven medical officers, be sufficient for the medical purposes of a regiment of three thousand men, two

hundred and thirty-one, the calculation being made upon the same principle, will be equal to the purposes of thirty-three regiments or brigades, consisting of one hundred thousand, or rather of ninety-nine thousand soldiers. If the sick be calculated upon a scale as amounting to one in ten, an army of one hundred thousand men produces ten thousand sick. The allowed medical staff, consisting of two hundred and thirty-one surgeons and assistant surgeons, is confidently maintained to be equal to the medical care of the number of troops stated, where hospitals are well arranged, stations permanent, and quarters fixed in a peaceable country. There are for instance only forty-three patients for each surgeon, which is an allotment of duty, sufficient to occupy the time and to engage the attention ardently, but not of the extent to be considered as an oppressive toil. In active war in the field where there occasionally occurs a necessity of detachment, or in foreign stations and new climates where there is reason to expect unusual sickness, it is deemed a wise and provident measure to add three extra assistants to each regiment or brigade. The most experienced of the battalion assistants may reasonably be supposed to be the fit persons to be selected for this duty: the office implies a responsibility; and it is held to be a step leading to a permanent promotion: it forms such addition to the common complement of regimental staff as is supposed to be suf-

ficient to enable an army to meet the ordinary occurrences of war, or the pressure of sickness in unhealthy climates—without difficulty or embarrassment;—it is regimental means attached to a moving or moveable body.

Armies frequently change their positions in the scenes of actual war; and, as there are sometimes found persons in armies, so disabled by wounds or other circumstances of sickness, as not to bear the fatigue of transport without inconvenience, pain, or danger, it becomes necessary, as being humane and even economical of life, to establish hospitals in places of security, for the more safe and ready accommodation of particular cases of chronic disease or dangerous wounds. Such being the rule of arrangement, one surgeon and three assistants, one physician and three assistants, may be thought to constitute a sufficient provision of medical officers for such kinds of sickness as cannot so properly be confined within the regimental circle,—in a division of an army consisting of fifteen thousand rank and file. According to this rule of calculation, an army of one hundred thousand men requires six physicians and eighteen hospital assistants or mates, six surgeons and eighteen assistants, extra of the regimental or brigade addition, estimated above as the just allowance for the purposes of war or foreign service.

Such is the detailed estimate of the operating part of the medical staff of an army consisting of one hundred thousand men, calculated for peace and permanent stations, or for war and foreign places. No person, who is at all acquainted with the subject, will have any doubts concerning the sufficiency of the peace establishment: it may, perhaps, be thought necessary to explain in what manner the war establishment is suited to move in war, or how the foreign provisions will meet the contingencies of sickness in unhealthy climates. It is expressly stated, that each regiment or brigade of three thousand men is provided with ten medical officers, during the time it is engaged in the scene of actual war, or while it is employed in foreign or unhealthy countries. If the number of the sick in the foreign country amount to one in five; and, if one of the surgeons be ineffective from indisposition, as may reasonably be supposed to be the case, there remain nine surgeons or assistant surgeons for the medical care of six hundred sick, which is one for every sixty-six patients. The care of this number is not an oppressive task; and a greater than the specified degree of sickness, giving a greater share of duty, will rarely be found to occur. Two thirds of an army sometimes die in foreign parts in the course of one year: this is not even rare: it does not often happen where diseases are of a rapid course, as is the case in tropical climates, that one fifth of the

military force is actually in hospital at the same time. The labour therefore, as far as respects sickness, will be manageable, particularly as there is some small aid to be expected from the physician and hospital mates in case of necessity. This point seeming to imply no difficulty, it next remains to shew how the proposed arrangement is calculated to answer the contingencies of active and serious warfare. It may be observed in the first place, that active war in the field and raging sickness among the troops very rarely meet together. The activity of war ordinarily dissipates disease: the surgical provisions are consequently the chief concern in such a state of things. Let it be supposed that a division of an army, consisting of fifteen thousand men, loses two thousand of its number in action, in killed and wounded,—probably five hundred killed, fifteen hundred wounded. Let it also be supposed, that one hundred of the wounded are grievously hurt,—the bones broken and shattered,—the circumstances so distressing as to call for the greatest care and attention on the part of the surgeon, and, with all his care, promising but an uncertain and a tedious cure: the wounds of the others are slight, chiefly flesh wounds in unimportant parts. The proportion between killed and wounded and character of wounds, as given in this place, is assumed only as a probable proportion and description. It will be found to vary according

to the nature of the action, as near or distant; and, according to the nature of the wounding instrument, artillery, musketry, bayonet, or sabre. The persons, who are grievously wounded, are understood to be conveyed to the general hospital, to be placed under the care of the hospital surgeon. As they amount only to one hundred in number, it will scarcely be maintained by any one who has knowledge of service, that a surgeon, aided by three able assistants, will fail in any part of the necessary duty from the extent of the labour. Fourteen hundred wounded still remain: for the care of these, thirty surgeons and assistant surgeons are withdrawn from the regimental staff. The duty in such case, medical and surgical, cannot be supposed to be oppressive. It is known that the regimental staff for the division of an army of fifteen thousand men amounts to fifty persons. If five of these be ineffective from indisposition, and thirty be allotted to the care of the wounded, there are left fifteen persons for the medical care, temporarily, of thirteen thousand soldiers; assisted, if necessary, by the physician and the hospital mates. The duty is thus ably managed; and it may be added, that it lightens every day, or the numbers diminish apace. Many of those who are grievously wounded die in a short time; those who are slightly wounded recover speedily. At the end of six weeks, two thirds of the number may be supposed to be withdrawn from the

surgeon's list,—if all things are propitious, and if care has been well administered:—hence it may be assumed, that the calculation of the medical staff, made in this place for one hundred thousand, or for fifteen thousand men acting upon one theatre, is adequate for the purposes intended in all circumstances of service, on the supposition that the materials are brought together with management, and, that they are disposed in just order favouring the easy execution of the respective duties.

But, though the proportion of medical officers assumed in this place to be a just number, must be considered as adequate for the purposes of an army of the specified force, provided the army be well organized, the medical parts qualified for their offices, knowing in their art and zealous in the execution of their duties; yet it is plain, that this machine, though well constructed fundamentally, will not move correctly in active war, unless it be well animated by a power which directs and superintends its joint operations. The proper execution of this office depends upon the judicious selection of the chief; a character suitably qualified for which may not in all cases be easily found. It is evident, that the chief medical officer of an army acting in the field requires some share of original genius. While zealous for the public good, he ought to be eminently skilled in his profession, possessing, at the

same time, the public opinion of his being so; and further, added to this general medical knowledge, it is evident that experience of military service in various climates, and acquaintance with all the conditions similar to those, in which the scene of war is laid, is indispensable to a correct execution of the official duty. It is necessary that a medical chief calculate; and he cannot be supposed to calculate justly without experience of things. The business of one army is a united concern: there, strictly speaking, can only be one medical chief in one army acting upon one theatre; but, as an army of one hundred thousand men will probably be too much divided for the inspection of one eye, it is necessary that the chief officer be assisted by deputies, proportioned in number to the needs. These must be masters of his views; they must even be men capable of acting from their own sources of knowledge, where the circumstances of the case require prompt decision.

Such is the scheme of a medical establishment, intended to provide justly for the care of the health of troops. It is presumed that the kind and quantity of assistance will be found, upon trial, to be sufficient for the purposes of an army of the force specified, employed in the field—in any climate, or under any mode of service which is likely to occur. Though correct in its con-

struction, and sufficient for the purposes of active operation, it is only an operating instrument, liable to be paralysed, or to stagnate in its course in consequence of a multitude of accidents, unless it be connected directly with the sources of the executive government, which adjusts and maintains in order the economical and warlike operations of the state. The concerns of the medical department of armies are important nationally; they are general concerns, and as such demand a common centre of direction and control resident at the seat of government; consequently, a medical officer, standing in the same relation with the executive at home, as the chief medical officer present with the army stands with the general commanding abroad, naturally presents himself, as a person forming the last link in the chain of this important department, the proper or improper management of which is so essential to the efficiency of the military instrument, as, in a manner, to hold the balances of success or defeat in war. The effect being so momentous, it is almost unnecessary to premise, that the person holding the office ought to be capable of executing the duty with knowledge and impartiality, capable of binding the whole concerns together by the operation of one enlightened principle. If the principle be fluctuating and unsteady, errors will be numerous, and embarrassment will occur daily. If the labours, connected with the just execution of the allotted duties, be extensive,

working hands must be allowed for the performance of work ; but, if it be desirable, that the movement be uniform and systematic, one head only can be allowed to invent, to arrange, to superintend, and, ultimately, to control. It is from experience solely that medical men learn knowledge ; it is therefore almost unnecessary to say, that the medical head of a military establishment must be a man who has passed through every scene of real military service, viewing with his own eye, and experiencing in his own person, the effects of warlike toil in various climates and conditions of duty. Such is a preliminary education : common sense pronounces it to be essential ; but, together with it, and together with the qualifications supposed to result from it, the chief must be known to possess talent and some share of original genius. Without these, he will not be uniformly able to make the requisite provision for the needs, or he will often fail in extricating his department from the new and unforeseen difficulties, which occasionally occur in the scattered scenes of war. It is a preliminary condition that he be qualified in knowledge to arrange the concerns of his department ; it is equally essential that he be ardent in spirit, so as not to be easily fatigued ; and, it is indispensable that his time and labour be totally devoted to the execution of his official duty, the performance of the official duty not considered as an extra job, subservient to

the purposes of private professional gains. In such case, the public duty will be discharged with a secondary zeal, if it be not altogether neglected.—To prevent the occurrence of such abuse is important; where it exists, the public is deceived and the service suffers injury*.

The importance of preserving the health of the multitude by means of discipline, and the value of arranging the concerns which are necessary for the speedy and effectual cure of their diseases by the aids of medicine, being great in itself and essential to the interests of a military people, it is reasonable to suppose, that those statesmen, who rightly understand the national good, will not hesitate to admit the person appointed to preside over the medical department of the military force to participate in the councils of the executive. If the person occupying this station possess the requisites, which are necessary for the proper execution of his office, his voice will often be of consequence in directing opinions, at least in correcting the erroneous opinions and faulty decisions of the higher powers, as they attempt to arrange the matters which relate to the health of the military. It is admitted that success in war depends much upon the integrity of the physical power, that is, upon the health of the military force. Those who plan in the cabinet, even those, who are ordered

* See Note B.

to execute in the field, are rarely capable of correctly estimating the force and effect of the various things which act upon animal structure; hence means are often miscalculated, and ends are rendered abortive by the operation of causes, the effects of which an enlightened medical officer, admitted into the national councils, would have foreseen, and, foreseeing, would have suggested means of preventing.

A basis of calculation, fixing the number of the different classes and descriptions of medical officers required for an army of one hundred thousand men, being premised; the next object relates to the mode of establishing a system of education, and of ensuring a test of qualification applicable to the circumstances of medical officers in their different gradations of service. The rudiments of such system can, as yet, scarcely be said to exist in the British nation; the proposition now made by the author will probably be deemed visionary or impracticable. He is aware of its condition: all that he requires for it is, that it be judged by the testimonies of reason and experience—not impugned by presumption and condemned by blind authority. If considered in all its circumstances, it implies nothing which is not easy in practice; it is hoped, that, if fairly tried, it will prove to be effective of purpose. It enjoins, in the first place, that no candidate for medical appointment

Education.

be admitted into the service of the state, without the most unequivocal testimonies of good private conduct, without the possession of a liberal and classical education becoming a gentleman; and, without proofs of such progress in medical knowledge, as confers the title of entering upon the exercise of the medical profession in civil life. With such qualities acknowledged, and such acquirements ascertained in an open and public manner, any person, presenting himself as a candidate for service, is deemed an eligible pupil of the army medical school; a school, in which he is destined to pass through a course of instruction, comprehending the ordinary matters which belong to the management of medical business in armies. When sufficiently acquainted with the economical duties of hospitals, and, when proved to be equal to the treatment of the ordinary military diseases, by exhibitions of skill under the inspection of competent and severe judges, the commission of battalion assistant is then open to him. After an experience of five years at home in times of peace, or three years abroad in the scene of active war, he is held eligible, in point of service, to fill the office of battalion surgeon: but, though eligible to attain the rank of surgeon after the prescribed period of service, he must still submit to formal trial before the appointment be actually conferred. It is required that satisfactory proofs be substantiated in the trial in which this question is decided, that

he has actually made progress in professional knowledge, that his private character, by the unanimous testimony of the officers of the corps, in which he has served, has remained pure and unexceptionable in all points; that his diligence has been habitual; his attentions to professional duties uniform, cordial, and correct. The examinations alluded to are supposed to be public examinations, open to every one. The reasons for appointment then stand on fair grounds, viz. seniority of rank in the army or division of the army present, supported by demonstrative proofs of progress in knowledge, and public testimonies of good private conduct.— From surgeons of the battalion rank, surgeons of regiment or brigade are supposed to be selected, after a service of five years, and, after the institution of trial to ascertain proficiency in knowledge, accompanied with testimonies of the uniform continuance of good conduct. From surgeons of regiment or brigade physicians of hospitals are selected, in the event of actual war; for, according to the plan proposed, no imaginary barrier is placed between the military physician and the military surgeon. None exists in reality: the duties of medical men in armies comprehend the knowledge of both, more frequently the exercise of the physician's mental talent than the surgeon's manual dexterity. As physicians of hospitals are supposed to be taken from the most eminent of

the class of regimental or brigade surgeons; so surgeons of hospitals are taken most suitably from the class of surgeons of battalion. They must however submit to trial, and produce satisfactory proofs of fitness, previous to selection. The main qualification consists in matured judgment and manual dexterity: this is necessary, for the general hospitals are the depots of the more difficult cases of surgery. From the class of physicians, even from the class of brigade surgeons, where the private character and professional abilities stand high in public opinion, and where they are proved to be justly estimated in opinion by open trials in practice, the persons, destined for the direction and superintendence of the medical concerns of armies are selected. These, whether denominated physicians, inspectors, or whatever else, are the highest medical officers of an army on service: as such, it is necessary that their qualifications be of the highest attainable order. The chief of this department, while competent to judge of medical as well as of surgical abilities, must be diligent in labour and zealous in character; firm in mind, so as not to yield to importunities; and just in nature, so as not to be biassed by predilections, or turned aside from what is right by prejudices.

The officers of different ranks, as specified in this place, compose the various parts of the me-

medical department of an army prepared for war. They are supposed to be educated in one school, so as to be instructed, in their professional duties, systematically upon one basis. As educated in one school and members of one body, they move in one channel through the various steps of the service: moving in one channel, and acting upon one motive, all appearances of favour or neglect, arising from the operation of partial causes disturbing the routine of promotion, are understood to be effectually precluded. Length of service and fitness for duty, unequivocally established, are here the sole grounds admitted as grounds of promotion. This being the foundation of the rule; it would be well that the reasons of the practice be clearly and ostensibly marked in every new step of advancement. The rule of justice is, in all cases, the rule which ensures permanence of action; and, as the projected arrangement is meant to move in a just channel through all its steps, the superintendence of the medical department ought in just reason to be committed to one chief, as a measure precluding the jarring opinions and contradictory views which otherwise arise in the management of business, the nature of which is sometimes obscure. That the medical chief officer have a chance of being instructed in his duties, it is an indispensable preliminary that the opportunity of acquiring knowledge by experience should have

been placed within the reach of his power: his duties lie with armies; it is consequently necessary that he should have served in the field. The actual possession of knowledge is indispensable; but besides actual possession, it is desirable that the proofs of such possession should have been manifested in public exhibitions of exertion, in conspicuous services: the conviction of qualification is thus impressed upon the public mind, and upon all parties concerned. With the knowledge implied, the person under view ought to possess such natural energies of mind, as an important and active situation demands, such integrity and impenetrable firmness of character, as may render him proof against all the obtrusive forms of solicitation. Such combination of qualities is rare; and the duty of chief medical officer is difficult in execution in its own nature. The just direction of the health department of a large army is often complex; but, though complex in its nature, it can only be well executed by one person; the view is only systematic as it proceeds from one source. The spirit which organizes must therefore be sole and original in its views. It is known to every one, that it belongs to the office of physician general to collect information concerning the health and management of troops; and it is evident, that it implies an exercise of judgment to arrange and digest the informa-

tion received from different quarters, with a view of issuing it out again, and of applying it effectively and systematically in practice through the whole extent of the military circle. A person, qualified for this office, must necessarily be supposed to possess a quick perception, so as to see things readily, with a just discernment of realities, so as not to be imposed upon by appearances. A just discernment of realities only arises from a comparison of things, as viewed in experience; it is therefore indispensable, according to the rules of just reason, that the medical chief of a military force be an experienced man, acquainted with military service in its various forms and conditions.—Without experience he will err; and he will err unwillingly, in the want of knowledge*.

The efficiency of health is of that importance in armies, that the want of it unhinges all the military operations. The fact is true; but the experience of the fact does not often make a just impression. It is rare that military chiefs make a correct previous estimate of the deficiencies, which are likely to happen to their means from the operation of the causes of disease. Medical men are seldom consulted deeply on the subject of military health: if consulted, they are

Rank regimentally.

* See Note E.

not always competent to judge—from want of experience; or bold to speak—from want of confidence in their independence. A few only of the more experienced and more discerning of military leaders view the operation of morbid causes with a just eye, and calculate the amount of contingencies with a due foresight. It thus happens, that, where there is a want of just knowledge of the things which belong to war in all their aspects, there is either a deficiency of the provisions which are requisite for the needs; or, there is a load of provisions which are superfluous; a cause, which, instead of being useful, proves to be an incumbrance, shackling the activity of the military operations with the transport of unnecessary baggage. As military plans, which are apparently well laid, frequently prove abortive in consequence of the accidents which happen to the health of the troops; so the preservation of health, as ensuring the military purpose, is reasonably supposed to be an object of great importance with a warlike people. Hence, as the office of superintending health is an object of great value and high consideration with such, it follows, in fair reason, that those, to whom this important charge is committed, should be so constituted as to maintain an honourable and respectable rank in the military fabric. The place of the medical officer, as professing the office of maintaining the military instrument in a condition

of vigour, is subordinate to that of command which gives the touch of action: it is still respectable; and it seems, by the just reason of things, to stand next to that which estimates the force, and arranges the order of attack in battle. The medical officer is thus unquestionably an officer of value in armies; but, if he do not stand at a just point of respect in rank and authority, he will not be useful to the extent of his intrinsic value. He will then be a name without a reality;—blamed for the ravages of evils which his knowledge probably foresees and estimates, but which his limited powers do not permit him to control.

The medical officer, the person now under consideration, is not received into the army at so early a period of life as the military officer. It is commonly known that the military officer is eligible to bear a commission at the age of sixteen; for he is not required to possess professional skill at the time of admission. The medical officer on the contrary enters the army, qualified to exercise his art, not intended to learn the first rudiments of his profession; consequently he cannot be supposed to be qualified to exercise that art, even in the sphere of battalion assistant surgeon, at an earlier age than twenty or twenty-one years. He is thus four or five years behind the military officer in attaining advantages. As, he must be instructed in his calling in a certain degree, before he be

permitted to receive a commission; and, as all parts of the army, calculated for a common purpose, should enter on an equal footing, and move afterwards to the extremity of their course in regular progression, it seems fair and reasonable that the battalion assistant surgeon should be received into the military body with the rank of lieutenant, or higher class of subalterns: further, being received into the military body on the grounds stated, as, he is required to spend five years in common circumstances, or three in active war in a foreign climate, before he be eligible to the office of battalion surgeon, he ought consequently to be admitted, according to a fair rule of progression, to hold the rank of junior major on receiving the surgeon's appointment; when advanced to the higher office of regimental or brigade surgeon, he naturally presents himself as junior lieutenant-colonel.

Rank generally.

The arrangement of rank, here proposed, seems, in the just reason of things, to be a fair disposition of medical rank regimentally. Rank is there important: it is of less consequence with that part of the medical staff which is attached to hospitals; it is notwithstanding useful that it be defined even there. It follows in this case, by observing a just rule of progression, that hospital surgeons are placed in the class of majors, ordinary physicians in that of lieutenant-colonels, chief phy-

sicians, who direct the medical concerns of the army, in that of major-generals. The medical chief receives orders only from the general or officer in chief command: his communications are confidential; and, it ought to be understood, that he participate, to a certain extent, in his general's councils. As the health of the army, of which the medical chief only can be supposed to form a correct estimate, is of much consequence in the execution of military purposes, so it might be well if this officer were consulted officially on important occasions, and rendered responsible for the effect of his counsels. The calculations would then be more correct than they now are.—If the rank of medical officers be defined precisely, it follows as a necessary consequence, that their field allowances in war, their allotment of quarters in peace, their fuel, forage, division of prize-money, and whatever else belongs to military service correspond exactly with the allowances of the respective ranks. The medical staff shares in the fatigues and dangers of war;—in just reason it is entitled to a share of advantages*.

It is a rule of common sense and reason, that ^{Pay.} the pay of the military force be estimated on fair grounds, the quantity proportioned according to the relative value which money bears with the

* See Note D.

nation to which the troops belong ; or, which it bears in the countries where the troops are destined to serve. The value of money is at present depreciated in Britain beyond what it is in most countries in Europe. The pay of the British military officers is thus high. It appears magnificent in the eye of foreigners ; but, though the sum be high nominally, it is not capable of furnishing superfluity, not even of providing conveniences in the same proportion as the smaller pay of the troops of foreign countries. From the lower price of provisions, and the operations of various official privileges for military in most states of the continent of Europe, the military officers of foreign powers are enabled to subsist upon their pay, even to maintain a certain fashion of appearance, customary with persons of rank and distinction, without encroachment upon their own funds. It is otherwise in Britain : from the high price of necessaries, and the extravagant price of luxuries, which habits have converted into necessaries, the British subaltern officer cannot subsist suitably upon his pay ; he cannot, at least, maintain a distinction of manner, connected with sumptuous living and elegance of equipment, which, in common opinion, marks the character of a gentleman. Hence the military officer, whose only fortune is his military salary, is necessarily obliged to move in a narrow sphere. His income being circumscribed, nay contracted to a

smaller measure than the income of the mechanic, and the sum of income and expenditure being that, on which is formed the estimate of a man's value in the opinion of commercial people, the subaltern, who has no fortune of his own by means of which he expands the circle of his expenses, stands, ordinarily, in low estimation in the opinion of the multitude. This is an evil which calls for a remedy. The profession of arms is honourable as it undertakes the defence of a common country: it is not, or it ought not to be understood to be a mercenary trade—practised for the sake of hire. It marks a short-sighted policy to place the allurements of gain in the eye of the soldier, or to permit the hopes of accumulating wealth to stand forward as an object to animate military exertion. This organizes war into a system of robbery; which, however it may flatter appetite and aggrandize the condition for the time, uniformly brings ruin in its train. But, though the acquisition of wealth will be placed by no wise nation in the view of the soldier as the object of service, it is at the same time common sense and common justice, that the labours of the soldier be rewarded nationally with a just, even with a liberal hand. Self-denial is a soldier's virtue: it must, in such case, be a voluntary, not a compulsory virtue; the military condition is supposed to be so constituted, by those who estimate things in their true reasons, as

to be equally removed from starving poverty and gorgeous superfluity.—But this by the bye. A discussion on the subject of salary for the military officer is foreign to this place; that of the medical officer requires particular consideration;—it is capable of improvement without an augmentation of public burden. The medical part of the army is circumstanced differently from the military, in several respects in what relates to the condition of emolument. The medical candidate is later in being qualified to bear a commission than the military pupil: he is obliged to act independently on many occasions from the time of his appointment; and the performance of his duty implies some attainment of knowledge. The education requires more expense in money, and more intense application in study. It is therefore reasonable to allow, that the reward or salary bear adequate proportion to the disbursements of the money and the toil of mind. The battalion assistant, according to a late regulation in the British service, enters into the army with the rank of lieutenant. He thus seems to have an advantage over the military pupil; but, as he enters at a later age, and moves with a slower progress through the professional ranks; and, as the prosecution of medical science requires a provision of means which must belong to himself, it is no more than fair and reasonable to allow a higher salary for his services at the commencement of his

career. If the pay of a lieutenant be five shillings and eightpence per day, seven and sixpence seems to be a just, but not an over proportion of reward for the assistant surgeon. The assistant surgeon is not received into the army before the age of twenty or twenty-one years. He is not supposed to be qualified to hold the commission of surgeon before a service of five years; unless in actual war in foreign stations, where the opportunities of acquiring knowledge are multiplied, and the personal risks increased; so he cannot, according to this rule, attain the surgeon's rank before the age of twenty-five: it is not even probable that he will attain it then; for it is rare that appointment takes place when the conditions of eligibility are fulfilled. When the assistant obtains the appointment of surgeon of battalion, he is classed in rank with the captains of the line. This is a boon of late years. It is something; but it is not sufficient. In order that things be preserved on a fair balance of movement between the different members of the military body, it is reasonable to expect, that, as the battalion surgeon should be permitted to rank in the class of majors, so the daily pay should be fifteen shillings, net. Instead of five years service and twenty-five years age, the legal period of eligibility to the rank and pay of battalion surgeon, it is probable that there will be ten years service and thirty years age, before the appointment confer-

ring this advantage, be actually obtained. This is in fact the more probable case ; and, if this be so, every liberal-minded person will be disposed to allow, that the man, who deserves, from professional knowledge and purity of private character, to fill the office of battalion surgeon, cannot be thought, as things now are, to be over-rewarded with a salary of the amount proposed. It has been suggested in this place, and the usefulness of the suggestion is demonstrative, that battalions should be thrown together in bodies of three thousand men or upwards under a regimental or brigade name, with a colonel of an eminent military character always present in command. On the presumption of such arrangement taking place, a surgeon of regiment or brigade, standing in rank among the lieutenant-colonels, and receiving the daily pay of twenty shillings, net, completes the projected medical establishment of the army in peaceable times. The regimental or brigade surgeon cannot attain his station under the age of thirty, and under a service of ten years ; he will not obtain it in some cases, under a service of fifteen or twenty years. There are but few who can expect to rise higher ; and, as it is the highest point of expectation with multitudes, no reasonable person will pretend to maintain, that the reward of twenty shillings per day is a high reward for a man, educated liberally, and serving faithfully in distant and unhealthy cli-

mates to the latest serviceable period of his life.

The above is the projected medical establishment for troops, as arranged by battalions, regiments, or brigades. It is supposed to be sufficient for all medical purposes in stationary quarters, or in times of peace. Some further provisional means are necessary in times of war: the condition, or rank of these, has already been defined; the pay or emolument is now to be considered and fixed on reasonable and just grounds. The hospital surgeon, taken from the class of battalion surgeons, selected according to the sanctioned rule, viz. length of service and proofs of actual qualification, preferably selected from among the older and more infirm surgeons, on whom the fatigues of the field might be supposed to bear hard, is proposed to be advanced to the daily pay of twenty shillings, net. The physician, who, in the same manner as the hospital surgeon, is only a war officer, is selected from among the surgeons of regiment or brigade; from among such, for instance, as are more distinguished for medical knowledge than for surgical dexterity. As physicians must indispensably be men of service and experience; and, as they probably will not be under thirty-five or forty years of age when they attain the physician's rank, the daily pay or salary will not be too high at two pounds per day, net;

it is too low at thirty shillings, according to the present rate of things.

The rate of the salaries, here stated, is supposed to hold out an adequate and just reward for the professional members of the medical department of armies, under all the forms of rank and service. The salary or reward of the head or chief, who communicates with the general, and binds the concerns of the department together in correct order, may imply a question of some difficulty with financiers. If it be expected that the office be useful, it is demonstrative that the conditions connected with it should be liberal. It is an office, necessary only where armies are employed in the scene of actual war; but it is then important, and of great responsibility. The medical chief officer, according to the arrangement now proposed, is classed in rank with major-generals, his deputies with colonels: his labours are of high value; his rewards cannot well be rated lower than four pounds per day, net; the rewards of his deputies lower than two. This officer, appointed for the superintendence of the medical concerns of armies in the field, is taken from the higher class of surgeons, or from such as have acted as physician: learned and eminent in character by common confession, the elevation to the higher rank is publicly acknowledged to be due to his merit, previous to

the formal sanction derived from the official commission. The chief medical officer in the field, as observed above, is a war officer on temporary duty: the chief or physician general, intrusted with the domestic arrangement and superintendence of the medical concerns of the whole military force, probably dispersed in a great variety of parts, is on permanent duty at all times—acting equally in war and peace. Being placed in a high office, his character ought to stand high in the opinion of the nation; for opinion in this case gives confidence and energy to action. As he is supposed to be well informed in his profession, instructed by experience, and distinguished by the possession of talent, his pay or salary cannot well be rated lower than six pounds per day, net. The rewards of an eminent medical man, interdicted most peremptorily from the pursuits of private practice, as ought to be the case with a person charged with a concern so important as the arrangement and superintendence of the medical department of the military force of a great nation, will not be thought to stand too high at the sum stated*.

The arrangement proposed in this place is easy in practice, obvious in utility, and essential to the prosperity of the state. As armies, and, above all others, British armies are extensively provided with

Discipline
and forms
of medical
duty.

* See Note E.

an establishment of medical officers, it is of the first importance that these officers be well selected, and that their powers of aid be applied directly to the precise point of need. An army is divided, according to its proper constitution, into circles of various dimensions, the movement of which is under express command: it is therefore easy in military life to accomplish the end proposed. As it is easy, so it is important: every part of the military instrument is estimated and valued for an ultimate purpose; the inefficiency of parts affects the active force, changing the state of balance to the unfortunate scale, as relative to the hostile power. In order that the balance be preserved on the favourable side, which, as far as depends upon the efficiency of the military parts, consists in the preservation of health, it will be useful, or rather it is indispensable, that every individual soldier in a battalion or corps, be inspected by a medical officer once a day in ordinary circumstances, twice a day during the prevalence of epidemics. By means of this precaution, the approach of sickness will be frequently seen at a distance; the approach being discovered, the open action may often be prevented; at least the disease will not, in such case, be permitted to make a secret progress without resistance, an occurrence which frequently happens where military economy is loose and medical officers are negligent. To preclude the possibility of such event taking place, and, as it is not

uncommon, so the consequences are sometimes serious, it is necessary that soldiers be paraded daily for medical inspection—without exception of persons. The parade being formed, the ranks opened, the medical officer, in proceeding along the line, examines the countenance of every individual: where any thing suspicious is observed in the eye and countenance, other signs which indicate the seeds of lurking disease are inquired into. Such form of inspection, which may seem to be troublesome at first, becomes easy in the course of practice. The medical officer acquires a ready discernment of the obscure characters of disease by studying the aspects of countenance; and, as he learns knowledge in this routine of discipline, he is often furnished with the opportunity of cutting off mischief in its beginnings. The examination now noticed is a daily examination for the discovery of the obscure signs of approaching acute malady: besides this, the legs, feet, hands, and secret parts, are to be inspected twice a week, for the purpose of discovering the beginning of unclean or troublesome local disorders; some of which gain ground and propagate widely by neglect.—It is supposed to be a standing order among well-regulated troops, that every individual soldier be fit for duty in the full sense of the word, or in the sick list under regimen and medical treatment. By complying rigidly with this order, and by executing diligently the form of manage-

ment proposed, the list of sick, unless where the causes of disease are uncommonly strong, will be kept within moderate bounds. Hence, the military instrument, being perfect in all its parts, that is, healthy and vigorous generally and individually, the sum of its power calculable, the effect of its force in application to purpose may be anticipated with a fair expectation of accuracy in the result.

N O T E S

OF

ILLUSTRATION, PROOF, AND APPLICATION.

CHAPTER I.

Inconveniences connected with the Establishment of general Hospitals for the Reception of military Sick; with Notice of the Causes of the Evils which follow the Adoption of the System alluded to, as applied to the general Purposes of Armies.

A. §. It is commonly known that till after the formation of standing armies, a measure which implies a systematic arrangement of all the economical concerns which relate to troops, the provisions made for the care of military sick and wounded were miserably deficient in every country in Europe. But though it be admitted that the medical means were deficient, and the miseries of disease exposed to the eye of the public in early times, and though it be now witnessed in most countries that military medical establishments are formed upon a grand scale, the business of hospitals conducted with care and regularity through all their processes, yet it is not certain that mortality, in similar diseases, is less now than it was in former times when the system of care was so defective. This fact, which is supported by reference to history, seems to mock human wisdom: it implies the supposition that medical aids are of no intrinsic value in them-

Deficiencies
of medical
provisions
in armies in
early times.

selves; or, that there is error in the existing mode of applying them in armies. Experience refuses assent to the first; the last appears to be the case in fact. In early times, the medical assistance, though scanty and poor in kind, was applied directly to its purpose; for it was disposed regimentally or by troops. The sick were usually scattered over a wide circle; and, though destitute of necessaries on many occasions, though even sometimes denied the help of the medical hand, they had the chance for the most part of breathing a pure air. The disease of the soldier, of whatever nature it might be, had then only its own mortality. Under the existing system, where multitudes of sick are accumulated in general hospitals, the air is contaminated; new causes of disease are generated by the simple act of accumulation; mortality is multiplied artificially,—in some cases, multiplied to a prodigious extent, as a consequence of mistaken care and ill-judged precaution.

French medical code.

The French, a people at all times fertile in invention, as they were among the first of modern nations who formed standing armies with a view to conquest and permanent dominion, so they also took the lead in establishing hospitals, as receptacles for the sick and wounded of the military. The medical code, composed for the use of the French armies, and acted upon in the times of the monarchy, holds a place of importance among the medical codes of military nations. Its foundations are laid upon a great scale; its parts digested with seeming knowledge of the subject in all the economical relations, and arranged with such an air of correctness as to give expectation of a brilliant effect in practice. But, perfect as it seemed to be in the mechanical

arrangement of its parts, there was disappointment in the time of trial, in the scene of actual war. The operations of cure were tedious and feeble in the extreme in French military hospitals in the times of the monarchy; they permitted a dilapidation of the army almost without control: the sick were simply, as it were, collected together; they were not restored to health speedily by a decisive rule of practice: it is further probable, indeed certain, that causes were generated adventitiously in consequence of accumulation and other practices, which in many instances proved destructive of life secondarily to great extent.

The objection, which lies against the military general hospitals of the French, applies in a greater or lesser degree to the military general hospitals of the other continental European powers, among which Austria and Prussia are the most eminent in economy, and the most distinguished for good management. Frederick the Second, usually styled the Great, and held in common opinion to be a master of military business in all its parts, perceived, in the course of his military service, that the health of the soldier was the main hinge of effect in war: while he saw this important truth exemplified in practice, he perceived at the same time that the existing provisions were very insufficient for ensuring that important purpose in his own armies. He considered the soldier as royal property; and, as the quantity of materials of this kind was often inferior to the needs, he found it necessary, in such defect, to husband with economy those materials which he possessed. The arrangement of a system of medical care, with the proper equipment of hospitals for the reception of sick and wounded, seemed to present itself as an obvious remedy, calculated to di-

Prussian
medical
regulation.

minish the dilapidating effects of war. The King was chief in the state, as well as general in the field; and, as he had the capacity of forming a plan, so he had the power of supplying without control the whole of the provisions which his experience discovered to be useful in his purposes. In execution of this view, he formed a system of hospital regulation corresponding with the principles of his military code; consequently, constructed on a systematic basis and on a grand scale. It is now in activity in the Prussian armies; and it is held by many to be the most complete system of hospital regulation which yet exists.

Austrian.

The Emperor Joseph, the Second, who, either possessed a philosophical mind intrinsically, or who was enamoured with the name of a philosophical reformer, arranged a system of medical management for the uses of his army of great correctness and precision, constructed upon principles of liberality towards medical officers themselves, as well as of regard for those who were the subjects of their care. The regulations are now in force in the Austrian armies, and, it is known to every one, that the hospital duties of the Austrian armies are correctly performed in all the ostensible, economical parts. But, though the hospital duty be well defined and correctly executed in this as well as in most other of the armies on the continent; yet it is still a mechanical routine of duty, not animated with that warmth of interest which gives effect to the application of means. A cold indifference necessarily attaches to the execution of duty among great depots of sick: the social connexions do not, in such case, exist among the patients and those who are appointed to take care of them. It is admitted, that the

bad effects of this arrangement are in some degree diminished by the operation of the rule which obtains in the Austrian service. The Austrian regimental staff stationed at the several great depots, is appointed to attend the sick and wounded regimentally: the cause complained of is thus diminished; but it still exists. Other evils of important magnitude necessarily arise. The sick or wounded, as collected in great numbers at depots which are usually fixed in secure places, are often removed to a distance from the acting army: a loss of time is the unavoidable consequence of the removal: but besides this, causes are generated as an effect of accumulation, which augment, and even create mortality adventitiously, far overbalancing the effects of any good which can be supposed to arise from the systematic performance of the medical and surgical duties alluded to.

The British nation, which is often engaged in war, ^{British.} and which has often fought with a brilliant success in the field, does not claim an equal share of praise for the correctness of its military arrangements. The medical system adopted for the purposes of the army has fluctuated extremely; and it still fluctuates. In the earlier part of the last century, the medical provisions, constituted for the use of British troops acting in foreign countries, like the medical provisions of other warlike powers of the time, appear to have been very inadequate to the needs: the estimate of the soldier's value had not then been duly made. Whether the Duke of Marlborough was not sufficiently interested about the fate of his sick and wounded from conviction of the importance of the concern; or, whether he was not enabled, in defect of means, to afford the necessary assistance to those who

suffered in misfortune, it has been often said, and it is believed to be true, that while the actual slaughter of Marlborough's battles was great, many, who might have been saved, perished in the field, in want of timely assistance from the surgeon. The voice of humanity was heard, or the interests of the state were better understood in the succeeding period. Earl Stair commanded on the continent under His Majesty George the Second; and, during his command, such arrangements were effected with respect to the care of sick and wounded, as give more real value to his character than the fame of many victories. The value of health and the importance of the life of the soldier still rose in estimation. In the following continental wars, the hospital department was extended with a view of better preserving the lives of men. The intention was good; the effect did not correspond with the intention. The hospital staff consisted of men of ability, and there is reason to believe that they did their best; yet the general hospital was esteemed to be the destroyer of the army: it was even noted by military officers of unprejudiced observation, who served under the Duke of Cumberland and Prince Ferdinand, that, where troops, trusting wholly to their regimental resources, were so circumstanced as not to have connexion with general hospitals, the loss by death was proportionally less than in the opposite case. Such was said to be the fact on the continent, under the rule of distinguished commanders and celebrated physicians; the practice was tried, and the effects were proved not to be different in America, in the American war. The British army was there well appointed in all respects: the hospital staff was numerous, and, upon the whole, well selected: the general hospitals were rarely crowded with sick beyond a

just number, so that there was rarely any mortality from the operation of adventitious causes of contagion: yet, even where circumstances were so favourable, it may be said without risk of incurring error, that, as the cure was more tedious, so the mortality was greater in proportion to numbers, in general hospitals than in the hospitals of regiments, though the latter were not always well equipped with necessaries, and sometimes could not boast of able medical officers:—this was verified wherever there existed means of making comparison.

The British general hospitals, which were dormant after the peace of the year 1763, expanded considerably in the progress of the American war: they swelled rapidly, and burst forth into an enormous production at an early period of the late war. It may be thought necessary to notice in this place, for the sake of connexion and illustration of effect, that a Board was appointed in the latter end of the year 1793 for the management of the medical concerns of the British army. It is observed in ordinary life, that new men often solicit notice in their sphere by the adoption of new measures. The Board newly constituted, acting with the impulses of other men, attempted to distinguish itself by organizing a medical code on new foundations: this, it is natural to suppose, was to catch the impression of its masters. These, as practitioners in civil life, acquainted with nothing in the circle of medicine beyond the limits of the city of London, conceiving a general hospital to constitute the palladium of an army's health, formed the design of extending the sphere of military hospitals, more strictly speaking, of constituting general hospitals as the main instrument of medical effect for the

purposes of the military force. The general hospital was thus considered as the great theatre, designed for the reception of military sick and wounded. The members of the medical Board, as not being bred in the army, had no knowledge of regimental surgeons; regimental surgeons were consequently undervalued and overlooked, physicians and surgeons of the regular schools being held, in the opinion of the new chiefs, to be the only persons competent to act in military hospitals. The admission of the principle called for the adoption of a new measure, viz. the creation of new officers of the privileged classes. The regimental surgeon, not known to the members of the medical Board, and scarcely permitted to make himself known by his knowledge and exertions, perhaps not enrolled at Surgeons' Hall, or not a pupil of a London hospital, not a member or licentiate of the College of Physicians, and not eligible to become so, as not admissible to examination while holding His Majesty's commission of surgeon, &c. was now barred the expectation of attaining the higher hospital rank; a privilege which had formerly been open to him, and a distinction which was held out to him as a reward of his services and his merits. The regimental surgeon, so circumstanced, could scarcely fail of feeling himself degraded: most people will be disposed to admit that he was injured; he may thus be supposed to have lost a portion of his zeal. If barred the expectation of promotion and the hope of advantages by the rule now enacted by the Board, he was even in a manner stripped of confidence in his professional ability; for, as general hospitals were destined to be the great theatre of military sick, the slighter maladies, itch, sore legs, &c. were only supposed to be suffered to remain in the regimental infirmary. It might be deemed invidious to go deeply into

the causes of this arrangement ; it is important to notice its effects on the health of the British army.

General hospitals being now considered as the great theatre of military sick and wounded, it was ordered peremptorily in the year 1794, when the British army began its retreat through Holland, that infantry regiments should disencumber themselves of their sick, by disposing them in certain hospitals provided as places of security in the rear. As no means of transport were allowed for sick regimentally in the event of moving ; so every person, disabled by accident or temporary indisposition from preserving his place in the military column with arms and every thing belonging to him, was necessarily sent off to the depot specified in the order. The order alluded to was punctually complied with. Its operation thinned the ranks and filled the hospitals in a very short time. The sick and lame flocked to the depots by hundreds ; they returned not till after a long absence ; and, when they did return, it can scarcely be said that they returned by fifties. The sickness in the British army on the continent is known to have been great in the end of the year 1794 and beginning of 1795 ; the mortality was excessive in proportion to the number of the sick. The establishment of general hospitals, the means adopted by a mistaken kindness for the relief of the army, may be considered as a main source of the evil which committed this dreadful destruction. This is a bold assertion : the public will judge from the fact, whether or not it is a true one. The assertion, so unreservedly made in this place, may seem to receive proof in the example of the British cavalry. The cavalry, as possessing the means of transporting, on the march, such of their numbers as were sick or indisposed, sent few or

Evils connected with general hospitals.

no patients to general hospitals. This description of force traversed the same fields as the infantry, lived in the same air; yet it experienced little sickness, and little or no mortality in the whole course of its service. It will probably be alleged that the conditions of cavalry and infantry are not similar, and that the case does not apply correctly. This is admitted to be so; and, did the sole proof rest on this example, the assertion would not be sufficiently supported: its proof may be deemed conclusive by reference to the history of such infantry regiments, as found the means of carrying their sick in their own train, during the continuance of this troublesome march; a circumstance, which happened to several at a later period of the retreat, when permission was given to commanding officers to hire or press waggons from the people of the country, for the purposes of the service. The experiment was made by several, and the event was fortunate as far as respects the subject of health. The writer is enabled to speak with confidence in the case; for, he had the actual experience of executing the duty and witnessing the result. No serious inconvenience was felt in the act of moving, and no injury occurred in any instance from the measure adopted. It was practicable, found even to be beneficial in the experience of the author; it was practised, and, it is believed, it was found to be serviceable under the inspection and management of others. In short, it may be added, that the history of the retreat alluded to furnishes argument in its early part, of the exhausting operation of a general hospital upon the effective force of an army; in the latter part, of the salutary effect of transporting the sick at all hazards along with their respective corps. The act of transport was not found to impede the progress of cure, where

measures were justly taken, and carefully executed. If this be the case, and the fact is undeniable, the supposed necessity of collecting sick in general hospitals for the sake of applying medical aid is stripped of its chief support.

It is proved clearly from the history of the health of the British army in the retreat through Holland, and from numerous instances of similar effect in other places, that military sick may be ordinarily transported with safety in open waggons, under all the chances of weather to which military service is exposed. The notoriety of the fact evinces the practicability of trusting the health of armies to regimental arrangements, moveable in all cases with the corps, or within a given distance of its route. If the regimental medical arrangement be practicable in the scene of war; it is plain, from a comparison of the sick returns of general and regimental hospitals, that the course of the disease, where things are otherwise equal, is shorter, the mortality in similar diseases smaller, in the latter than the former establishment. The average time, required for the cure of acute diseases in regimental hospitals, where the surgeon is properly instructed in his art, cannot be supposed to exceed a fortnight; scarcely a man returns from general hospitals in less than six weeks; few in less than three months: nay it is well known to military officers, that those sick soldiers, who are sent to general hospitals in the months of July or August, rarely appear again in the field during the continuance of the campaign. It is difficult or rather impossible to fix a just scale of mortality in acute disease; for the force of cause and circumstances of condition vary extremely in different cases. It is admitted that the foundations of things relating to this subject are not

Advantages
of regimen-
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equal in general and regimental hospitals; but it is demonstrated by the best of evidence, where the case at all bears, that a comparison of the sick returns of regimental establishments and general hospitals shews the advantages almost uniformly to be on the side of the former. If this be proved in the evidence of a document so authentic as the official returns of hospitals must be supposed to be, the fact can scarcely fail to attract attention. The importance of the case demands a thorough investigation. When the case is investigated and the truth ascertained, but not till then, a rule of conduct will, it is presumed, be established on sure grounds for future practice. The following considerations may probably aid in forwarding the investigation proposed; they will serve to explain some things which are paradoxical in the eye of many.

It is a maxim demonstratively established in the healing art, that acute diseases are more easily, and more effectually removed or cut short by decisive measures applied at the beginnings, than after the course is formed and advanced in progress; consequently a regimental surgeon of common sense and ordinary experience, as furnished with an opportunity of applying his skill under the favourable circumstance, often commands a more fortunate issue than the skilful physician, whose aid is not called for till the disease is confirmed, or probably far advanced in its course. The latter is the ordinary lot of the hospital physician. It does not usually happen that sick soldiers are conveyed to general hospitals on the first indications of illness: general hospitals are also frequently, perhaps commonly placed at some distance from the quarters or cantonment of troops; hence time, perhaps

entire days are lost, where hours are of importance in deciding the issue of the case. But, while the time, which might have been employed, and which ought to have been employed in conducting active operations, calculated to cut short the course of disease in its beginnings, is consumed in the act of transport to a distant hospital, during which there is ordinarily a suspension of application of medical means; so there often occur other causes, occasioning a further loss of the moments most precious and important for acting. The regimental surgeon rarely administers medicines of active operation after he has determined to remove a patient to a general hospital; the hospital physician rarely prescribes effectively the day on which the patient is received: the disease is thus left to pursue its own course; consequently the diseased habit is confirmed, for it meets with little interruption from the interference of art. If decisive measures, promptly applied, be capable of cutting short the course of fevers or other acute diseases in the early stage, the opportunity is lost in the case supposed. If lost in the one case, it may even be added, that the necessity of employing decisive measures in the commencement of illness is diminished in the other, by the opening which is given to the regimental surgeon of removing from under his care such person or persons as seem, in his opinion, likely to encounter a malady of danger or difficulty. Men are naturally disposed to get rid of trouble; and the responsibility of other men's lives bears hard upon the consciences of many, particularly the unexperienced: hence it is not unnatural to suppose, and the proof of the supposition is clear and of frequent occurrence, that, if relief from such a load of responsibility exist in the presence of a general hospital it will often be resorted to. Preventive of this

occurrence, which has such serious effects upon the health of the army, it will be deemed a wise regulation, as it is undeniably an useful measure were it enforced in practice, that a surgeon be not appointed to an office of so great trust as the care of the health of a regiment, without a public exhibition of decisive proofs of knowledge; and that, when qualified in knowledge, he be taught from the beginning to look to his own resources only for the execution of his own work, which is the speedy and effectual removal of sickness in all its forms. It is well known in common life that necessity engenders exertion; and, it may be easily conceived, that, if a general hospital be provided for the reception of every disease which threatens to be dangerous or troublesome, the regimental surgeon naturally becomes indolent and insignificant: not encouraged, or not compelled to exert himself, and not deemed competent to execute his duty to the full extent, as the establishment of general hospitals directly implies, he cannot help thinking humbly of himself, and, thinking humbly, it will be surprising if he do not act feebly. The establishment of general military hospitals has thus a repressive effect upon the zeal and research of regimental surgeons. On such grounds it is productive of national injury. It is witnessed daily that the causes, which animate exertion, do not operate strongly in general hospitals. The examples of the speedy and effectual removal of diseases are there rare; and, it may be inferred in this case, that, as the medical means do not reach their ends promptly, an establishment of such slow execution is not well contrived for the useful purpose in war. It is obvious to every man's common sense, that evils arise from loss of time, as spent in the act of transport to

hospitals established in remote places from the quarters of the troops. The disease is permitted to assume its own action, and to pursue its own course in neglect of timely aid; a habit is thereby established which implies an extended duration. But, besides loss of time in the first instance, the whole routine of general hospital duties, though probably performed mechanically and correctly in order, may be naturally supposed to be performed languidly and coldly in spirit; for the various parts have here no intimate or regimental bond of connexion with each other. The orderlies or attendants are regimental comrades in regimental hospitals; in general hospitals no personal acquaintance probably exists between the patient and his nurse; consequently there is little interest felt in the event. The service towards the sick is a service of drudgery in one case; in the other it is a duty mixed with friendship and kindness. This is felt strongly by the soldier, with whom the day of removal to a general hospital, even of the best character, is a day of sorrow on account of separation from comrades, and the prospect of seclusion with strangers; the day of return to the regiment is saluted as a day of joy, inasmuch as it restores him to friends and companions. But, as it is the prompt application of means, independently of the grace or charity in the mode of administering, which gives efficacy to medical prescription; so prompt application is best ensured in regimental hospitals, where, the circle being small, the objects stand at all times immediately under the eye of the surgeon; in general hospitals the duties are general and extended; and though they may be regularly performed, yet, as they are ordinarily performed in routine, without minute attention to circumstances, the best occasions for acting are sometimes, nay, frequently, lost.

The above circumstances are among the causes, which have a share in rendering events less fortunate in general hospitals than in the regimental medical establishments of armies: besides these, the changes which happen to atmospheric air from the accumulation of a great mass of diseased people confined within a narrow circle, manifestly affect the conditions of the health. Where the diseased movement has actually ceased, the recovery of healthy action is rapid, if the air be pure. On the contrary, though disease may have actually ceased, yet recovery is slow and precarious, where the air is foul and inelastic: air becomes foul and inelastic, though not contaminated with contagions, where sick men are assembled together in great numbers within narrow limits, even though the wards should not be crowded beyond the ordinary proportion. It is thus that the impurity of the atmosphere is one cause of slow, imperfect, and precarious recovery; but besides the impurity alluded to, as communicated to the air from the respiration of a mass of people living in circumscribed bounds, a distinct noxious cause is occasionally generated in large hospitals, particularly in hospitals occupied by persons suffering from the action of acute disease. The operation, which produces this effect, is not rightly understood: but, whatever may be the progress of nature in forming the new product, the fact is notorious, that something is generated under peculiar circumstances of place and subject, which infects the air with its own qualities, attaches itself to dead substances, and impresses the living subject placed within the sphere of its action with a train of diseased movements, capable of generating or manufacturing a cause similar to itself; thereby perpetuating its existence to distant times, and accidentally con-

veying its seeds to distant places. It happens frequently in consequence of this operation, that, after the complaint, on account of which the patient originally entered into the hospital, has ceased altogether, another, generated in the manner stated, assumes its place, and endangers the life of the subject in a greater degree than the former. This occurrence, which is frequent where great collections of men are confined in a narrow space, serves to account for the excessive artificial mortality of general hospitals; and, while it does this, it furnishes a conclusive argument against the formation of such establishments as receptacles for the sick of armies.

If the fact be admitted, and the proofs of it appear decisive in a review of army returns, that mortality is greater in proportion to numbers in general than in regimental hospitals, all fair allowances being made for the difference of circumstances which attach to the case, the causes assigned in this place for the existence of the fact may perhaps be thought to be the true ones, viz. the neglect of medical assistance for days together, where hours are of importance in assuring safety; or contamination of air by accumulating persons in small space, where purity and expansion are known to be essential to the recovery of health or continuance of life. These are the leading causes of the excessive destruction which is witnessed in armies, where the care of health hangs principally on the medical provisions attached to general hospitals. The contamination of air and propagation of disease in virtue of contagion are most frequent in temperate climates, in foggy, damp and close weather; the loss of time is most calamitous in tropical countries, where the course of disease is rapid, where fever is easily broken in the begin-

nings, but, where it is scarcely to be stopped or turned aside by any means yet known after it has attained a certain stage of progress. Such causes of mortality, viz. delay in applying assistance from remoteness of position, and contamination of air from accumulation of persons, are connected, almost inseparably, with the constitution of general hospitals and forms of duty adopted in these establishments. The destruction proceeding from the operation of these causes is great: it is scarcely possible to calculate the amount precisely. If reference be made to the example of the British army, during its service in Holland in the year 1794, the proofs of the destructive effects which arise from the practice of collecting the military sick into general hospitals are decisive. It is admitted that the character of the arrangement and the errors of the management augmented the loss prodigiously in the case adduced; but it is also presumed on good grounds, that had the arrangement been systematic and the management good, that is, regular and correct, the loss would still have been great; for arrangement and management, though they may diminish, are not sufficient to counteract completely the force of the strong causes which the establishment under view almost necessarily implies. In the best state of the case, a number of men are withdrawn from the strength of the army, removed to a distance and detained long in hospital under a tedious process of cure. This happens, even in the Prussian and Austrian service, where the military arrangement is most perfect, the execution of the hospital duty mechanical and correct in all its details:—the movement is there exact, but the spirit is deficient in interest and animation; effect is, on that account, less fortunate.

It is understood, from what has been said in this place, that the establishment of general hospitals, as depots for the reception of sick and wounded of armies, does not comprehend the most eligible mode of providing for the important concern of military health. The difference of effect, as judged by a comparative statement of returns of general hospitals and regimental infirmaries, as far as these are subjects of comparison, is clear: the reasons, assigned for the difference observed, conclusive. The mortality, or loss of numbers resulting from the plan of collecting the sick and wounded into general depots, is demonstrative; but besides numerical loss, the morals of the soldier suffer injury from the operation of a variety of causes which exert their influence in the establishment alluded to. The energies of the mind are blunted, habits of sloth are contracted during the continuance of feeble health and tedious confinement; or if the energies of mind be not blunted, they are diverted into a wrong, often into a vicious channel. It is no rare occurrence for the soldier, who was formerly active and enterprising, to degenerate into a malingerer, as allured by the full ration and the fascinating allowance of liquor, so usual and so hurtful of late years in British military general hospitals. This is an obvious as it is a serious evil; it cannot well take place in regimental infirmaries, where the character of every man is known to the surgeon and other attendants. The causes, which instigate the sick man to deceive, are there few; the chances of carrying deception through are small. The soldier, who is accommodated as a sick man in his own regimental hospital, being still under the inspection and command of his own officers, does not cease to feel that he is still a soldier. On the contrary, the soldier, who has been confined within the walls of a

general hospital for three or four months among strangers, and most probably among persons who possess no genuine military habits, assimilates with what he sees, loses his military mind, and, when his bodily activity is restored, frequently gives proofs of deterioration or degeneracy into a vicious course. The case supposed is not a rare one in fact. Hence it may be concluded, that this corruptive action upon morals, and the destructive action upon life, so conspicuous a product of the indiscipline and feeble treatment of general hospitals, cannot fail to give a decided preference to the regimental infirmary, as a place of accommodation for military sick and wounded. The measure which is economical of life, of morals and money, appears fortunately to have met with some attention in late times. The condition of the regimental surgeon is now improved in a pecuniary point of view; the means are furnished him at the same time of doing justice to his sick in regimental hospitals in Great Britain in a better manner than heretofore. It may be added, that all the views in medical arrangement ought to be directed to effect improvement in this part of the service. If the skill be adequate, it is ready at hand for application in the favourable moment; and further, while aid is ready at hand according to the regimental disposition, it is also plain that adventitious causes of mortality are less liable to be generated and propagated than in the other case. The sources of the evil are here few and scattered: it is by concentration in large depots or general hospitals that they become active and virulent. It may further be observed, that a medical establishment regimentally forms a part in the military system, incorporated in the body of the fabric as integral under the guidance and control of the military officer; a general hospital is a foreign part

in the military body, and, as a foreign part, which has its own centre of action, it attracts to itself, extends its sphere, absorbs every thing that is within its verge and moulds it in its own form: hence the operation of military general hospitals is unfortunately found to disorganize armies, to consume the parts, or to disgorge them with a debased character. The instances are recent, and the proof is clear.

Excessive Number of the medical Staff.

B. §. It is a maxim in the business of war above all other businesses, that means be calculated so as to be rendered equal to the ends; but, while equal to the ends, it is indispensable in the view of economy, which is the soul of permanent effect, that they do not exceed. If the medical staff of the British army, as constituted for foreign and active service, be compared with the medical staff of the principal military powers on the continent, or with the estimate made on the present occasion, conceived to be a just and sufficient estimate for all forms of service, the excess in number appears at first sight to be prodigious. If this be excess in reality rather than just measure there exists an error of great magnitude. It is an acknowledged and fundamental rule in military arrangement, that all the parts of an army have an uniform, a defined and a precise duty. This constitutes economy, which consists in such knowledge of things as calculates and measures the means correctly for the accomplishment of the ends, without waste or without deficiency. If calculation

Utility of proportioning the medical staff correctly to the needs.

and measure of means be considered as a fundamental rule for ensuring success in the military department of armies, a similar degree of exactness is no less necessary in the medical which arranges the concerns of health. Physicians and surgeons, who are idle or but half employed, do not feel important in themselves; and, not feeling important in themselves from the execution of important duties, they do not appear to be so in the eye of others. Hence a superfluous number of medical officers, instead of being a benefit, is actually an evil in an army. While the measure implies a profusion of public means and public money, it frequently mars the just execution of the official effect. The parts, crowded and embarrassed in their field of action by number, seem degraded in their rank; they are diminished in their value while they execute no just share of productive labour in the community. That this is the case, in the medical department of the British army, no man of the least knowledge of things will pretend to deny. The fact speaks for itself. If every soldier in the detachments of the army, which formed the expeditions for the Cape of Good Hope and West Indies in the year 1795, had actually been confined to the hospital bed at one time, the officers of the medical staff, appointed for the service of these expeditions, could not, according to a fair estimate of a medical man's duty, be supposed to have been oppressed with toil, in executing the ordinary tasks of medical attendance towards the whole of the force as numbered in the sick list—had it been properly arranged and conveniently disposed in well-regulated hospitals. If the case be examined in detail, the proof will be manifest.

An expedition, consisting of three thousand men, sailed for the Cape of Good Hope in the beginning of the summer of the year 1795. The medical staff, exclusive of regimental surgeons and assistant surgeons, consisted of one inspector, two physicians, three surgeons, two apothecaries, and ten hospital mates;—in all, eighteen hospital officers; who, on the supposition of the regimental staff being ineffective, and every soldier in the detachment in the sick list, had, individually, only one hundred and sixty persons demanding their medical care; a sufficient task of labour it is true; but, at the same time, not an oppressive toil, if the arrangements be judiciously made and the parts be fit for their respective duties in all points. The force acting, or intended to act in the Charibean islands under Sir Ralph Abercrombie, appears to have been designed to amount to twenty thousand men or upwards. The hospital staff consisted of an inspector general and an assistant, eleven physicians, eighteen surgeons, six apothecaries, one hundred mates, twenty island or acting mates, and twenty-five hospital mates acting with regiments;—in all, one hundred and eighty-three medical officers, or a medical officer for every hundred and ten persons. The force acting, or intended to act in St. Domingo, seemed to be calculated at fifteen thousand men, though the British troops did not actually amount to that number by some thousands. The medical staff consisted of an inspector general and two assistants, seven physicians, nine surgeons, five apothecaries, and seventy mates or upwards,—making in all about ninety-four medical officers, or one for every hundred and fifty-eight persons. The total number of troops in these services amounted to thirty-eight thousand men; the total number of the hospital medical staff to two hundred and

Estimate of
medical
staff for par-
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vices.

ninety-five; or a medical officer for about every hundred and twenty-eight persons, exclusive of the addition of the regimental staff. If the average strength of the regiments be rated at seven hundred and fifty, and each regiment be complete in its medical establishment, the number of surgeons and assistant surgeons of the line amounts to one hundred and fifty-six: this, added to two hundred and ninety-five, makes the sum of four hundred and fifty-one medical officers, charged with the care of the health of thirty-eight thousand men,—a high proportion, as affording one medical person for every eighty-eight soldiers. The casualties of sickness happen to the medical staff as to others; and, if one in ten be deducted from the total amount on account of indisposition or accident, there remain four hundred and six fit for effective duty; or one for every ninety-three or ninety-four persons.—Such is the detail of the proportions of the hospital medical staff, appointed in the year 1795 for the force specified serving at the Cape of Good Hope and in the West Indies. The rule followed in this case seems to allot a physician for two thousand men, a surgeon or apothecary (for their duties were esteemed common) for every thousand, a mate for every hundred and fifty. It may thus seem to be proved by the detail given, that the hospital staff was alone sufficient for the medical care of the whole division of the army, had it actually been all sick at one time:—had it been disposed in hospitals under good arrangement, the labour would not have been judged to be a hard task of duty.

Evils of ex-
cess.

If the calculation of a medical staff, appointed for the purposes of an army of one hundred thousand men, be made according to the rule which appears to have been

assumed in appointing a staff for the expeditions alluded to, the physicians amount to the enormous number of fifty, the surgeons and apothecaries conjointly to one hundred, the mates to six hundred or upwards; the whole to seven hundred and fifty hospital staff. If to this be added four hundred regimental medical officers, the total number of the medical class amounts to eleven hundred and fifty. If the calculation be made according to the scheme proposed in this place, as the just rule of calculation, a force consisting of one hundred thousand men, or rather ninety-nine thousand men, as classed in thirty-three regiments or brigades, only requires ninety-nine battalion surgeons, ninety-nine battalion assistant surgeons, thirty-three regimental or brigade surgeons for the peace establishment; ninety-nine brigade assistants, six physicians, six surgeons, and thirty-six mates or assistants additional, in provision of war and foreign service; in all, three hundred and eighty-eight medical persons, exclusive of chiefs intrusted with direction and superintendence. This number deducted from eleven hundred and fifty, leaves an excess of seven hundred and sixty-two persons appointed for no demonstratively useful purpose. Experience is sufficient warrant of the fact, that if the arrangements be good, and the aid here assigned applied directly to the proper point in the favourable moments for effect, no cause for complaint of insufficiency on the head of medical attendance, will exist in any circumstances that are likely to arise in military service. If this be correct, the existing excess of medical officers appointed for an army of one hundred thousand men, equipped and prepared for foreign service and actual war, implies an expenditure of money and waste of labour to such an extent, as cannot fail to strike

the executive with strong impression of error, calling imperiously for reform. It is known that expeditions were equipped in the late war according to the expensive plan alluded to: the examples of the expeditions which were fitted out in the year 1795 are adduced; and if the numbers here given should not, in all cases, be correctly precise, it is notwithstanding certain that the inaccuracy leads to no unfair conclusion. The hospital staff appointed for the Cape and West Indies amounted to two hundred and ninety-five, to which one hundred and fifty-six of the regimental line are to be added, giving a total of four hundred and fifty-one. According to the plan proposed, the duty would have been performed by ninety-one officers for the peace establishment, fifty additional for war and foreign service, making in all one hundred and forty-one. This implies a saving of three hundred and ten medical officers, for the purposes of an army consisting of thirty-eight thousand men. Judges of military service will decide which has the chance of being the most effective staff; it is manifest to every one which is the most economical.

It may, perhaps, be thought to be proved incontestably by what is said in this place, that the medical provisions for troops employed in foreign service, during some periods of the late war, were extravagantly measured according to every just principle of calculation, as warranted by the knowledge of what is useful, what was practised in former times in the British army, or, by what is now the custom with foreign warlike nations. The calculation is unquestionably high; but, it is probable it may be alledged in support of the rule existing, that British armies are destined to serve in foreign countries, and that, not-

withstanding the enormous multitude of medical officers attached to British expeditions, the sick are sometimes destitute of help in sickly climates;—at least they appear to suffer loss in want of medical assistance. This may be true; nay, is true in fact. It is a serious evil; and it calls for a remedy; but the remedy does not lie in an increased number of medical hands. It is known to be a fact, and it ought to be borne in mind by those who direct the affairs of nations, that an effective medical staff is that which is choice in quality and important in character;—not that which is fortuitously collected, and strong only in number. It is not the quantity, but the quality of the physicians which gives confidence to troops suffering under sickness. It is even seen that a mass of inexperienced and timid medical officers, instead of being of use, is of real detriment in a sickly army. In times of real calamity, arising from the effect of ravaging maladies, the young physician is embarrassed; he looks on with fear and wonder; the people die in multitudes; the army loses confidence; and the medical art is disparaged on its own account, when the cause of blame rests properly on the ignorance of its professors: the mere number of doctors avails not more in hospitals than the number of unskilful soldiers in the field of battle: the proofs of this are numerous and in point; for, had the cure of disease corresponded in success with the quantity of medical officers attached to the British army in the latter times, the late war, which was so calamitous to the nation from the ravages of sickness in most quarters of the world, would have been the most fortunate of any in the examples of history. It may be said, without violation of truth, that two thirds of the medical staff were idle or but half employed. Where the hospital staff acted, the

regimental staff did little or nothing; where the regimental staff did its duty, the hospital staff had only to amuse itself, or to pursue its private occupations.

Medical Education—Materials or component Parts of the medical Staff—Principle of Order—And Rule of Conduct of the Chiefs.

Institution
of a medical
school.

C. §. THE institution of a medical school, for the education of army surgeons, is an important object in a national point of view; it will not, it is presumed, fail to interest the cares of those who direct and superintend the management of the national military force. Unless the education of the army surgeons be laid upon one basis, and conducted in its course according to one principle, the effects cannot be expected to be correct and uniform in practice. Medical men, in common with men of other professions, possess different degrees of skill from difference of natural talent. The skill is manifested in the treatment of disease; it implies an exertion of genius, and it is chiefly conspicuous in cases of complicated difficulty. Its great efforts are reserved for great occasions; economy, or arrangement, which is frequently necessary to give effect to the exertions of skill, is, on the contrary, a daily duty, indispensable in all cases, and uniformly depending upon the practice of system and order. When the economical system, which is capable of uniformity, and which ought to be uniform throughout the army, is laid on good foundations, tried and approved in experience to be practicable

and useful; it is fit, in order that its utility be demonstrated to the simplest understanding, that its operations be shewn in movement in a military hospital instituted for the purpose of exhibiting instruction. Such example is important and essential; but, essential as it is, it cannot be given otherwise than by the institution of a practical school, directed exclusively to the express purpose of conveying information on every thing which relates to military diseases in their various forms and connexions; an institution which has as yet, perhaps, not been seriously thought of in this country. If however the measure, which is so practicable and so necessary for the good of the British army, should appear in such light to the higher powers as to impart a desire of adoption, it is evident that the Isle of Wight, where the depot of recruits and invalid soldiers is now placed, is an eligible situation for the purposes of the establishment proposed. Where there is a rendezvous of recruits, and of old men worn out by the effects of diseases contracted in foreign climates, there may reasonably be supposed to exist a sufficient supply of materials to furnish examples of the usual military diseases which occur in war. The army depot is thus the eligible place for the site of the medical school on account of the provision of materials; it is also eligible on account of economy of means. The medical officers, who are necessarily employed in the ordinary care of the sick and wounded, performing the duties of physician and surgeon at the hospital, may be so selected as to be capable of instructing the pupil in the principles of his future office, surgically, medically, and economically. The Isle of Wight, as things are now constituted, is evidently the most eligible place for establishing the army medical school; yet should there

be found reasons strong enough to induce the higher powers to give the preference to London, or the vicinity of London, the infirmaries of the Chelsea pensioners, of the Asylum of soldiers' children, and of the various guards and troops quartered in the town and neighbourhood, might be so arranged as to present, to the medical pupils, the proper specimens of military practice, and proper examples of economy in hospitals*. It is reasonable to suppose that the examples of management in such infirmaries would be infinitely more instructive than any thing that is seen or learned in hospitals, not military; for every thing would be there assimilated, as much as possible, to that which occurs in real service in war.

But in whatever place the school be established, whether in London or the Isle of Wight, it is implied in the supposition that such arrangement actually take place, that where the routine of hospital duty is correctly performed, and demonstrated impressively to be so, carrying conviction in all its steps to the mind of the pupil, that what is done is right and true, the pupil learns with facility and readiness; and, when intrusted with a separate charge on his appointment to a new office, he practises with confidence, for he is not altogether unacquainted with his duty. As the medical pupils of all denominations are now supposed to be initiated in the rudiments of their art in the same practical school, they will thus be furnished with the opportunity of learning what is

* A proposition to this effect was made some years ago by Dr. Pinckard, deputy inspector-general of hospitals; in which it was recommended to combine the three regimental hospitals of the guards into a brigade hospital, and to form this into a school for the education of medical men intended to serve with the army.

right, and of seeing the mode of applying the rules of their art consistently in practice; consequently, consistency of acting will pervade the whole medical department of the army. Such is not the case at present: the movements are jarring and discordant, inasmuch as medical practitioners, who are educated variously, carry the prejudices of their early education to the execution of public duties, as soon as they obtain an official appointment. If the preliminary, now suggested, were adopted, the stipulated qualification deemed indispensable for admission into the army, the conditions of the rule rigidly executed in practice, the subsequent promotions adjudged impartially to length of service and incontestable testimonies of ability, the medical staff of the army would be respectable in its character and useful in its station. As things are, it neither deserves nor obtains an uniform and consistent respect and praise in the course of its action: this can scarcely be expected, for it does not possess consistency in composition. The young men, who offer service for the medical department of the British army, belong to every different part of the empire. The principles of the medical art, as taught in the different schools in Britain, are not yet fixed upon a general and stable basis; consequently, medical opinions fluctuate and change capriciously according to fashions of time or place. As there is variety of opinion among practitioners in civil life; so the rudiments of private education may be supposed to be, as they actually are, various. If the opinions of private practitioners, who usually lay the rudiments of the regimental surgeon's medical education, be various and discordant, and thus produce discording effects in application to practice; so teachers, and public lecturers in schools and universities, strike out into a va-

riety of sects, pursuing conjectures and inculcating doctrines which do not admit of demonstration. Ingenious, but uncertain and contradictory opinions, concerning the obscure things which relate to medicine, are thus extended by the celebrity of teachers : acted upon by the uncontrolled authority of surgeons appointed to execute a responsible medical duty in armies. They prove a source of confusion when applied in practice, as differing in their nature and character ; they even substantiate error, and sometimes produce injury by counteraction, where all the movements ought to be harmonious. It is known, and it is frankly acknowledged, that, preventive of such confusion, error, and injury, the candidate for medical employment in the army has of late been required to submit to a formal professional examination ; in which is to be produced and demonstrated, previous to appointment, an adequate test of fitness. The intention is good ; but the effect does not correspond with the intention. It is well known that the answers to the questions, usually proposed at such examinations, are contained in common medical catechisms : they are learned by rote, and being learned by rote, they are probably pronounced without being understood. The test of practice under a competent and severe judge, the only decisive test of knowledge, is not required : the rule is thus defective ; for, as a superficial verbal knowledge of the bare signs of things is sufficient to introduce a young man into the list of hospital mates ; so the favour of the great, arts of insinuation with professional chiefs, or the good graces of underlings in office, who possess a key to the mind of their superiors, are often sufficient to carry them through the subsequent steps without the possession of professional qualification. If the inferior steps in the medical depart-

ment of the army be thus bestowed by favour in the manner noticed, and the case is of no rare occurrence, the higher appointments are not exempted from the operations of partial bias and private interest. It is often left to the general selected for the command of an army, or division of an army, to name his own medical chief. This is a very random measure. It cannot be supposed to belong to many of our generals to discern, with a just eye, the merit of medical men. Of diligence, attention and method they may be supposed to be competent judges where they have had the opportunity of witnessing effect in trials of service; they cannot be supposed to penetrate the depths of science, so as to form a just estimate of actual professional ability: hence, there palpably occurs a chance of error where the power of selection is lodged with those, who are not qualified to discriminate between truth and the appearance of truth. A commander in chief may be indulged with a body physician of his own choice; the health of the army and the safety of the state are submitted to risk, if he be permitted to choose the chief medical officer, who acts under his command for the purposes of the general service.

It is obvious to every one, who has turned his eye towards the medical department of the British army during the lapse of the last ten years, that medical promotion has not followed a regular and consistent rule. The tests of qualification have scarcely ever been open and public tests, confessed to be such in the opinion of competent judges. There is every where manifested an appearance of caprice in the conduct of the department; hence, it becomes in some degree necessary to investigate the subject with care, and somewhat in detail. The grounds,

on which this seemingly heterogeneous fabric is erected, and the secret springs which influence its movement in the course of its official functions, demand a full inquiry: but the subject is mixed intricately,—so complicated in its composition, that, to unravel the turnings and twistings and to expose all the parts in their just attitudes, requires a larger portion of skill and a more delicate touch of pencil than belongs to the writer. A task of so great delicacy is left to others; a rude, but it is hoped a correct, outline is presented in the mean time with a view of drawing attention to an object of great national moment. The constitution of the power, which forms, directs, and regulates the health arrangements of the British army, cannot be considered as a minor concern. It is important in all its views; and it is the duty of every honest man in the state to contribute his mite to improve its condition. With this conviction, the writer trusts he will not offend when he attempts to give information on a subject, which he has been led, officially, to study with some attention.

Constitution of the medical department and army medical board.

The medical department of the British army presents itself as an office of great magnitude, if the extent of its patronage be considered, or the limits of its power in appropriating public treasure. It is, however, only of late years that it has risen to such importance. In former times, when the regimental surgeon was the principal medical person in the army, and when the surgeon's appointment was bought and sold like the military commission, the surgeon general, who was the ostensible or acting chief in this department, having no great power of patronage or gift, did not so forcibly attract the eye of the medical candidate as in the present day. When the sale of the medical commission was suppressed, the patronage of

the surgeon general rose up like a new production: his office became important, for he had much to bestow. When the occasions of the war 1793 called for the appointment of a numerous medical staff, the patronage of the medical chiefs was necessarily extended; when appointments were multiplied to the extent that has been seen in the progress of the war, it swelled to an enormous magnitude. The British medical staff is now numerous beyond example, as compared with the medical staff of other warlike powers in Europe: and, as the sale of the medical commission is suppressed, the appointments being consequently gifts, the donors or medical chiefs may be reasonably supposed to attract the notice and command the devotion of a great many expectants. As the proper use of the power of bestowing is important to the well being of the army, the vigour and virtue of the army essential to the safety, even to the existence of the state, it is natural to expect that due care would be taken for insuring the able and faithful exercise of this important trust in all its circumstances and conditions. In order to enable the reader to form some judgment, from authentic materials, of the manner in which the duty of the medical office has been executed, it is necessary to take a retrospective view of the subject during the American and the late war. It would be troublesome to go farther back than the American revolutionary war, and it is not essential to do so towards a just understanding of the case. The person who held the office of surgeon general during that contest served in America in the war 1756, in quality of staff surgeon; consequently, he might be supposed to have gained some knowledge of military service, and to have attained some idea of the medical arrangements practised in armies from his own experience. He

was not esteemed to be a man of genius; but it is generally allowed that the medical concerns of the army were well conducted under his direction; the means were ordinarily well selected; and they were, for the most part, measured to the ends with some degree of considerate calculation. His successor was a man of genius of the first order,—eminent in professional science. But, skilful in science and eminent in genius, it is to be regretted that he did not possess the advantage of having acted in an extensive field of military service. He was present with the army at the siege of Belleisle; but more with a view to obtain information in his technical profession, than to investigate the principles and cultivate the study of such arrangements, as belong to a medical chief directing the medical concerns of a military force. He was a man of discernment; and, it is probable that he discovered, in the course of his short service, the importance of the office of regimental surgeon; for he appeared afterwards by his regulations to consider a regimental hospital, as the genuine school of education for the army physician, or medical officer of the higher class. His life was unfortunately cut short at an early period of the late war. The office of surgeon general, vacant by the death of Mr. Hunter, was then new-modelled, or converted into a board, denominated the Army Medical Board, consisting of a physician general, a surgeon general, and an inspector general of regimental infirmaries.

It is a truth, not disputed, but necessary to be repeated in this place for the sake of connexion, that knowledge of human things, and, more especially than others, knowledge of medical duties in the scene of actual war, or preparation for war, is only to be learned by experience. This being the case, it may be useful to shew how the mem-

bers of the newly-constituted board are circumstanced in this respect. It is necessary to be noticed in the first place, that the person appointed physician general was not a military physician. He had not served in the army in any capacity, and never had been intrusted with the management of hospitals in civil or military life. This being so, it will not be deemed presumptuous to say that he had not been furnished with the opportunity of knowing his duties : and, as he had not been furnished with the opportunity of learning after the usual manner, it will not be maintained that he could be competent to act ably without pretensions to a preternatural gift. The surgeon general stood in a similar predicament. He was a surgeon in civil life. It may be admitted for the sake of argument, that he was eminent in his profession ; it is generally known that he was totally unacquainted with military service. The inspector general had some advantage. He was a surgeon in the foot guards ; but he had made his campaigns in London. The surgeon general died : the inspector general took his place, and left a vacancy for a successor, who had acted temporarily as surgeon with a detachment of guards in America, during some part of the American war. This inspector died in the year 1801, and was succeeded by the present, who, at the time of his appointment, was also a surgeon in the guards, of many years standing, but not acquainted by experience with the wants of armies in the scene of actual war.—Such are the pretensions of the members of the army medical board in regard to qualification, supposed to result from personal observation of things in the field of service. Circumstanced as the board is, and appointed to superintend the medical concerns of a numerous and widely scattered army, it is more than pro-

bable, that, possessing zeal in the highest degree, and filled with the most earnest desire of doing good, some things necessary in official arrangement may altogether escape notice; others may be viewed incorrectly:—if viewed incorrectly, they will not be provided for adequately. If it be from experience, and such is common opinion, that medical men can only expect to learn knowledge, it will not be maintained that the members of the army medical board present themselves to the public with a confident opinion of possessing the requisite share:—they have not at least been trained in the school which gives the proper opportunity of learning.

It may be inferred from what is said in this place that there must be a radical defect in the existing members of the army medical board, as now constituted, on the head of knowledge; for there is a demonstrative testimony of defect on the head of experience. It may even be added further, that, if the materials were not thus defective in their intrinsic qualifications, the mode of composition seems as if it were calculated expressly to mar the vigour, and to disturb the union of their common operations. The army medical board consists of three persons,—a physician general, a surgeon general, and an inspector general. The joint duty of the board embraces the consideration of all the means which relate to the health of the army. The purpose is one, but the different designations of the parts seem to convey an idea of distinct duties. The physician general is the first in rank; but he is only a member of the board: he cannot control by authority; and, not controlling by authority, if he does not convince by reason, his views are probably counteracted: it is thus that his motions, though radically useful, are liable to

terminate in compromise or non-effect. The subject is singularly shackled ; and, viewing the subject in its reasons it is natural to suppose, that where a board, instituted for the transaction of public business, consists of three persons of equal power and authority, as it rarely happens that three men think exactly alike in every thing ; so counterpoises existing, counteraction arises, movement is justled, embarrassed,—and effect is feeble or erroneous. The army medical board, constituted as it now is, is a complicated machine singularly contrived with counterpoises and balances of patronage and control, which called into action, as it is natural to suppose they must be, cannot do otherwise than render the movement jarring and discordant. An executive board, such as that now in view, charged with the direction of the medical concerns of the army, demands a chief or president, as a person open to receive suggestions, qualified to arrange informations and to form plans, empowered to execute purposes and bound to hold himself responsible for effect. The army medical board is not so constituted. The members are of equal power, or have different departments in the same field ; consequently, the views may be different ; if the views be different, the action becomes embarrassed, and the effect remains imperfect. Such might be supposed, from a knowledge of the nature of things, to be the action of an associated body composed of three parts of equal power and discording views.—Whether the reasonable case be the case in fact, a reference to the history of its acts will best illustrate.

The following cursory notice may be considered as giving some preliminary illustration of the nature of the jarrings and seeming contradictions, which meet the eye

of the public in the arrangement of the business which proceeds from the office of the army medical board. The physician general, a simple member of the board with a single voice, supposed to be possessed of the highest attainments of medical science in himself, consequently qualified to judge of science in others, is empowered, in virtue of his office, to select and recommend physicians for the service of the army. Here his labours end. He does not allot the duty of physicians, superintend their official conduct, or judge of their ability and diligence as manifested in action. This may seem strange to those who look for system and order in the management of the army medical concerns. But, strange as it may seem, it is true; and it may be observed further in illustration of this strange truth, that it is expressly guarded in the hospital regulations, that persons, who have acted, or who are acting as surgeons in the army, are not permitted to attain the rank of physician. It must be supposed in the just reason of things, according to the spirit of this rule, that if a person denominated regimental surgeon, though possessing a physician's diploma, be not permitted to attain the rank of army physician, so he cannot be admitted to be capable of judging of the physician's acquirements, or of superintending the physician's conduct in the treatment of the sick. Yet, in contradiction to this plain inference, the surgeon general is empowered to allot the physician's duty, and to judge of its execution in all its latitude; even to delegate the superintending and controlling power to inferior surgeons, to apothecaries, to hospital mates, nay to persons officially bearing the commission of purveyor which is not a medical commission. The persons, deputed by the surgeon general to the office of superintendance, are not admitted

to be physicians in supposed want of knowledge; they are authorised to direct and control the most learned and skilful of the fellows of the College who are destined to serve in military hospitals. It is held to be a rule in common life, that the overseer of labourers is more skilful than the labourer himself. If the surgeon be not qualified in knowledge to attain the rank and execute the duty of army physician, it is an enigma, difficult to be explained, by what process of refinement he is rendered capable of directing and instructing those who are his masters in their art. There is incongruity in the case;—injustice, in refusing the physician's rank to the surgeon, or injury to the service, in placing the skilful physician under the control of the ignorant surgeon, or other ignorant person constituted by the surgeon general principal medical officer of the hospital*. As the case now stands, the surgeon general directs and controls the management of general hospitals, where physicians act, and where internal diseases compose the hospital list, of which the surgeon general, as a surgeon cannot be supposed competent, without a contradiction in terms, to form a correct opinion. Principle and practice are here at direct variance with each other. A sanctioned regulation of the highest authority, constituting a rule of the service, is superseded by the mandate of the surgeon general. The customary order of things is inverted; the physician is degraded and abandoned, and, on what grounds, or for what reasons the physician general, who

* At York hospital an hospital mate was formerly principal medical officer empowered to direct and control physicians: the same person has now received the appointment of staff surgeon: a purveyor, by commission, performs this office at Plymouth at present.

must be considered as his legal protector, is induced to abandon this officer in such a capricious and forlorn station, must be left to others to explain. The physician general, as just now observed, selects and recommends the physicians; the surgeon general selects and recommends the whole of the class of surgeons, whether staff surgeons, surgeons of the line, or surgeon's assistants. The staff surgeon, recommended officially by the surgeon general, remains under the surgeon general's jurisdiction in his after-course; for he is supposed to act in general hospitals only, or under officers of the general staff over whom the surgeon general's authority is allowed to extend. The surgeon of the line, or the surgeon's assistant recommended by the surgeon general for appointment, is placed under the immediate control of the inspector general, in virtue of the inspector's general commission, extending to the control and superintendence of regimental infirmaries. The inspector general directs, superintends, and controls the conduct of the regimental surgeon and his assistant. He is not supposed to have knowledge of their qualities and qualifications previous to appointment to regimental duty, and he has no authority to recommend those who deserve well for promotion in the ranks of surgeon. This is an awkwardness, if it be not an injury to the service. But, as the inspector general might be disposed to complain of difficulty in being obliged to work with unknown tools, or, in being debarred from the privilege of bringing forward those who are useful for his purposes; so he is furnished with a counterbalance of difficulties, being empowered to select and recommend apothecaries, purveyors and hospital mates, who, as belonging to the establishment of general hospitals only, are under the immediate control of the surgeon

general, to whom the superintendence of general hospitals appears to be assigned. This is the case as it now stands; and, from this it is seen, that there exists, in the arrangements of the army medical board, a provision of shackles and counterpoises, seemingly contrived with a view of preserving a balanced action in the movement of the hospital department, in a similar manner as if the acting members were hostile powers who had interests separate from and independent of each other. The constitution of such a machine for an effective purpose of service seems oddly contrived: the cause is an enigma to humble understandings. If it owed its origin to the ambition of ingenuity which delights in forming new creations, its operation in action raises a thirst and contention for patronage, which converts the sentiment of public duty to the gratification of private sensation. This usually prevails; hence the public service is distracted and action paralyzed, as a consequence of various views and equal powers meeting in the members of this associated body.

Such, as has been stated, is the composition of the army medical board; and such, as have been noticed, are the effects which result, or may be expected to result from such a composition. It may not, perhaps, be deemed superfluous to notice a few particulars, concerning the arrangements which the board has adopted in the disposition of the duties of the inferior or subordinate parts—the physicians and surgeons of the army. The repair of those derangements of the human body, which arise from the action of foreign or unnatural causes upon animal structure, constitutes the duty of the physician, a person known in the army by the name of regimental sur-

geon, sometimes dignified with a diploma from a medical university, oftener acting without it. Whether the derangement of health, alluded to, be general or local, internal or external, the success of the remedy applied depends upon a correct acquaintance with the structure of the animal fabric, and a due knowledge of the laws of the animal movement. The healing operation relates to one subject and is comprehended in one view, whether it be moved by the obscure means of medicine or the open assistance of surgery. If the operation be one in itself, it cannot be expected that it will be so perfectly executed if the labour be divided; for one man cannot be supposed to begin correctly in a complex systematic process where another leaves off abruptly. The duty of the regimental medical officer is an entire duty, comprehending every aid within the circle of the science, whether medical or surgical; it is consequently necessary that the medical regimental officer be instructed in all the knowledge of the healing art, medical or surgical, under whatever denomination he may be known, whether that of physician or regimental surgeon. The regimental medical officer, though usually denominated surgeon, is physician in the just sense of the word, in virtue of his office; for the health of the soldier, in all its latitude, is the object of his care. Those who have viewed the subject with the eye of reason and good sense, among whom is ranked with distinction, the Emperor Joseph the Second, consider him in this honourable light. The arrangement of the Emperor Joseph is simple in its nature, and it is effective in its purpose; but it has not obtained general currency. The British medical arrangement appeared to partake of this simplicity originally; it is now complex in its formation, and embarrassed in its movement. The members

of the army medical board, which was instituted in the year 1793, wishing to appear ingenious, avoided simplicity in arrangement; and they missed of union of effect in action. They attempted to separate the medical office in military service into different departments, in imitation of the practice which obtains in the present time in civil life. As it has been imagined that progress is attained in the arts, and that profits are made in trade by subdividing the powers of mechanical labour, so the medical art has been subjected, like others, to be moulded by this manufacturing rule in its application to the purposes of life. There is deception in the case. It is not dividing, so much as separating, classing and concentrating operative powers for the production of precise effect, which gives success to the arrangements of the manufacturer. It must be borne in mind, that man, employed in this manner as an instrument of mechanical labour, exercises no power of thought, or at most a power of simply arranging and disposing separate parts according to a mechanical order. Machinery may be so contrived, in many cases, as to supersede his labours; and, viewed in this light, he is little further advanced than an automaton. It is different with physicians, surgeons and apothecaries, or the medical class intrusted with the repair of the health of a diseased animal body. These do not work by routine; if they do, it were better for their patients that they were idle. They must think at all the steps, and reflect in every step of their operations; for the subject of their care has an infinite variety of shades of difference in its nature, and it is liable to various fluctuations in its course. The duties of the medical officer, physician, surgeon and apothecary, run imperceptibly into each other. It is difficult to define the

boundaries precisely ; to preserve the action distinct is scarcely possible. The medical art is a whole, connected intimately in all its parts. If a whole, the artificial division of its parts may serve to promote the purposes of medical practitioners in the view of gain ; it mars the progress of the art as a science. If such division has been introduced into civil life with the design of dignifying the art and enhancing the gains of its professors, it is evident that such division is not necessary in the army on a similar account ; it is otherwise hurtful in retarding the progress of knowledge, and in weakening the effect of practice. It is plain, that subdivisions of labour in matters not directly mechanical and confined within precise boundaries serve to raise contentions, to foster counteraction, to embarrass designs, and to retard the progress of such operations as are calculated to produce one effect. Hence embarrassment and difficulty result from the practice of dividing things which are naturally united, that is, in constituting two or more officers for the performance of one office. The medical business of the army is of one character ; and, in conformity to this idea, the army physician was frequently chosen in past times from among the number of army surgeons, accustomed to act as physician, surgeon and apothecary. He is now regarded as a person of a superior order, selected from among the physicians of the College of London, licentiates of the College, or graduates of Oxford or Cambridge. Without experience of the diseases of soldiers, even, perhaps, without experience in the treatment and cure of diseases of any class of the community, he is thrust into the fabric of the army as a foreign part in an organized, independent body. As a foreign part, surrounded by what is new, strange, and perhaps repulsive, he can scarcely avoid feeling irksome

in himself. Every thing in a military hospital is unusual and unknown to a college or city bred physician: the pressure of disease is there often threatening, the means of relief not adequate; as a novice in this new and distressing scene of things, he may naturally be supposed to be embarrassed and confused;—he often is so in fact to an uncalculable extent. The service has suffered, and still suffers injury from the embarrassments of inexperience; the want of experience in military physicians necessarily results from the arrangement which commenced with the æra of the army medical board. The measure adopted by that body, and acted upon since the year 1793, furnishes demonstrative proof that there is ignorance of the true interests of the army. It has been tried and found to be ineffective; its inefficiency, supposed or real, gave rise to the creation of a new class of officers, an order of inspectors, generally appointed from the surgeons of the line on the presumption that the surgeons of the line were acquainted with the proper modes of arranging hospitals, and informed on the subject of military duties necessary for the just conduct of medical establishments in armies. A remark occurs on this subject so obvious in itself, that it cannot fail to strike the notice of the most ordinary observer, viz. that, as physicians, bred in privileged colleges, acquainted only with medical practice in civil life, and probably not much acquainted even with that, were appointed army physicians to the injury of army surgeons, who entered the service with the liberty of fixing the eye on the higher promotions as the reward of experience, knowledge and faithful discharge of duty; so the army surgeon is now suddenly elevated to the rank of inspector, to the apparent injury of the physician however experienced, and how-

ever able he may have proved himself to be to fill the highest station on the medical staff. Whatever be the extent of services and the real merits of the man, the army physician, being now destined to remain at the precise point in the circle at which he set out, finds himself in an awkward predicament. There is no progress in his sphere; and, if there be no progressive movement towards the attainment of rank or emolument as a reward of long service and zealous discharge of duty, he cannot avoid feeling himself to be foreign: his energies are repressed, for, as he is not permitted to advance in the course of promotion and assimilate with the medical staff, his chief care is not to retrograde or to be expelled. The error of this arrangement is obvious. It arose originally from forcibly dividing things which are one in their nature; but opinions change and fluctuate; and the fluctuation or seeming caprice, which marks the conduct of the present medical system, strange as it may appear, is, in reality, the character which attaches to a board, composed, as a body, of three parts of equal power and discordant views. Where there is no chief in council, the operation of an uniform and consistent principle, calculated to direct and regulate things by one rule for the purposes of general good, has no certain existence. It is thus that the present medical system, as manifested in application to the purposes of the public service, rests on a capricious action and re-action between the different members of the medical board, actuated by different views and interests. Hence, as the different members grow or wane in authority, the different operating parts, as under or not under the immediate protection of the member of domineering influence, are unduly elevated, or injuriously depressed. In this manner, if there was

injury affecting the credit and interests of the army surgeons, even error operating against the interests of the army itself in the early periods of the late war; there is now an additional error affecting the interests of the service, and direct injury acting against the physician, as excluded from expectation of promotion to higher rank however merited by exertion, or however useful the extension of such person's services might be to the public. This is fluctuating, perhaps temporary. It has resulted from changes in a changeable body; and, it is not improbable but that the tide may turn some time hence, and the favours flow in the other channel.

Utility of defining the medical Rank.

D. §. THE medical officers who are allotted to guard ^{Medical} the health of the military force, particularly the regi- ^{rank.} mental staff, must be considered as an integral part of the military body. Being integral, they require a defined rank; and, being important, they are entitled to a rank that is respectable. The rank of the medical staff, though not a high rank, is precisely defined in the armies of most of the European powers on the continent: it is only of late that it has obtained this consideration in the British army; even now, its place is not clearly and unequivocally established through all the gradations of the staff doing duty in general hospitals. The importance of taking care of the health of soldiers is great; its benefits so evident, in a variety of views, as not to require proof. It is matter of regret that the means employed for the

purpose are not always wisely selected ; it is unfortunate that they are perhaps in no case sufficiently honoured. The chief points to be considered, in giving efficiency and consistency to military force, are energy and union of moral principle resulting from the institutions of religion, depending on the zeal and exertions of the regimental chaplain ; stability of health and possession of physical power resulting from regimen, depending on the wisdom, zeal and authority of the physician, or army surgeon ; preparation and mechanical adjustment of materials resulting from discipline, depending on the ability of the tactician and attention of the regimental economist ; application of powers to ultimate purpose, an effect resulting from the penetration and depending on the resolution of the general commanding in chief. The proper execution of these offices, calculated to form and direct the operations of the military fabric, requires an extensive and correct knowledge of things : as such, it can only be well performed by persons who are instructed in science, who possess zeal, and who are endowed with some share of original genius. The science of preserving or restoring health, so necessary for maintaining the effective powers of an army, is an acquisition of experience attained only by toil and occasional risks of danger. As such, its professors, while they have adequate rewards in salary, are entitled to an honourable place in rank. It is therefore believed that the proposition now suggested, for establishing a general rule to the extent proposed, will not be deemed extravagant by those who view the subject with an unprejudiced eye. As the duty cannot be known without experience, or conducted properly without genius ; and, as it is more intimately connected with the organization of armies

than the offices of commissary and accomptant, it is reasonable to suppose that it ought to stand before these offices in rank, as well as in emolument. Such is not the case in fact. The commissary-general classes among the major-generals and receives the military honours of that rank: such distinction is not granted to the chief medical officer in any case in the British service.

Amount of Pay, and Mode of Payment.

E. §. ACCORDING to the proposed estimate of medical assistance for an army of one hundred, or rather of ninety-nine thousand men disposed in thirty-three brigades, without excess or defect, ninety-nine battalion assistant surgeons are supposed to be struck off from the amount of the establishment existing at present. The battalion medical officers are consequently diminished in number by one third; but, while diminished in number, the regimental staff is improved in quality; inasmuch as a chief surgeon, of acknowledged experience, is allotted to each brigade or regiment of three thousand men. The chief surgeons, so appointed, amount to thirty-three in number; the sum of their pay and allowances is somewhat short of the sum of the pay and allowances of the ninety-nine battalion assistants, who are struck off from the list as exceeding the quantity which the service justly requires. According to this arrangement, the expence of the peace establishment differs little in amount in the plan proposed and that which now exists. While it differs little in expence, it is more efficient in purpose, in a similar manner, as a small force, trained, disciplined and

Amount of
pay, &c.

experienced in its art, is more competent and effective in war than a larger mass of new and unformed recruits: for such, as unacquainted with military diseases and unexperienced in military service, the greater proportion of the medical staff must be supposed to be according to the present constitution of this part of the army.

The expence of the peace medical establishment is, as has been shewn, nearly equal in the plan proposed, and in that which now exists; the war establishment is more economical in the plan proposed by a prodigious amount. It will, perhaps, be thought to be useful and satisfactory to form an estimate of the difference, ascertained as nearly as possible by reference to what was adopted for the various services of the year 1795. In the year 1795 a medical staff was appointed for a force of thirty-eight or thirty-nine thousand men, serving in the West Indies and at the Cape of Good Hope. The number of the staff, with a comparative estimate of the salaries and allowances of various kinds, is exhibited in Table, No. I.

The proportion of medical officers, assigned for the purposes of war and foreign service, will be found in trial to be amply sufficient according to the plan proposed, where the various parts are justly placed so as to be at hand in the time of need. The local circumstances of the West Indies called for two chiefs and two deputies for the force specified, on account of the frequent occasions for detachment or division of the troops; had the whole thirty-nine thousand men acted in one field, one chief and one deputy might have been reckoned an ample provision. The army, serving in the West Indies, as consisting of several brigades dispersed in different

islands, required, on that account, different medical chiefs and deputies; the force stationed at the Cape of Good Hope, consisting only of three thousand men or one brigade, had no occasion for any medical person of higher rank than the surgeon of brigade. The command was that only of a major-general—and the brigade surgeon is the major-general's medical chief. The estimate of the expence of a medical staff for a force of thirty-nine thousand men being made on sure grounds, or according to the rule followed in the year 1795, may be extended to an army of any amount; for instance, to a force of ninety-nine or one hundred thousand men. The calculation is partly exhibited in the table. The numbers there stated are somewhat lower than they appear to have been in the actual scene of service; the proportion given is, however, that which appears to have formed a basis for calculation; the additions may be supposed to have been intended as an extra allowance for contingency. According to the estimate exhibited, in which every advantage in the calculation of expence is given to the existing arrangement, there is an annual saving in the salaries and allowances of the additional medical staff allotted to an army of one hundred thousand men, employed in actual war or foreign service, of no less a sum than one hundred and twenty-four thousand and twenty-eight pounds sterling. The saving of money is great; but the important advantage, in the opinion of men of military experience, will be thought to lie on the mode of disposition and in the superior qualifications of the staff. These, in the case supposed, are allotted to a precise purpose; they are ascertained to be capable of a defined duty.

Mode of
payment.

It is proper to be noticed in this place, that the pecuniary concerns of the regimental surgeon have undergone some alteration, and upon the whole experienced amelioration within these few years. At the commencement of the late war, the pay of the regimental surgeon was four shillings per day, the medicine-money six. Medicines were supplied from the public stores in time of war, or on foreign service; but the surgeon was still liable to be charged with the medical expences of recruiting parties in any part of the united kingdom; an expence, which, on some occasions, pressed very hard upon his funds. The rule was changed some years ago; the issue of medicine-money was suppressed, medicines were supplied as wanted; the pay was raised to ten shillings per day, and the medical expences of recruiting parties were no longer chargeable to the account of the surgeon. The actual emolument was probably but little increased by this arrangement; but, as the income was less precarious and the manner of receiving it more agreeable, it was generally acceptable. This alteration was a change of manner, without any very decided advantage to the surgeon; a further alteration has taken place within the last twelve months which gives a prospect of benefit. The daily depreciation of money calls, in reason and justice, for proportional augmentation of the salaries of public servants; and, as no one will dispute the utility, even the necessity of augmentation in the case in question, it only remains to find out the most eligible mode of carrying it into effect. It is indispensable, in forming a structure capable of answering purposes of permanence and use in all cases, that the first steps be laid on sound foundations. When the first step is well placed, the further progress is made with confidence as centring on a just basis. The

battalion assistant surgeon is to be considered as the first point in the medical fabric of the army; and it is mentioned with satisfaction, that his position is now correct, the rank and salaries such as they ought to be. This point being fixed on just grounds, the other steps move in progressive order without risk of error. The battalion surgeon follows the battalion assistant: his condition is improved of late; the mode after which it is done does not seem to be the most simple and correct that might have been devised. His duty is one through all its stages; yet he presents himself in three different lists of pay. This may seem strange, where there is no change of rank or duty implied in the nature of the service. In this manner, the pay is nominally twelve shillings*, fifteen shillings, and twenty shillings per day, subject to the deductions usually made from military pay, giving a net pay of eleven shillings and four-pence, fourteen shillings and a penny, eighteen shillings and ten-pence. The real pay of eleven shillings and four-pence is drawn monthly, as the pay of regimental officers; the additional pay is drawn quarterly, issued by warrant upon certificates of a defined number of years of service. There is here a complication in the mode of issue which might have been avoided; but this is not all. The addition which is made to the surgeon's pay, after the expiration of a certain number of years of service, without any new condition implied in the relative duties, stands forward as a plain case of two rates of hire given for precisely the same kind and quantity of labour. A surgeon's salary is considered as a price given for labour,—a reward adjudged for service. If the labour be well performed, it is entitled, in reason

* Chargeable with the expence of keeping a horse.

and justice, to the same reward in all cases ; for, drawn under the same constitution of office and for the same service in the same corps, it is precisely the same work, whether it be performed by a man borne on the lists of the army for thirty years or for three. It is just, and not unusual to grant reward in gratuity for long and faithful services ; it is unusual, and it may not seem wise to give two prices for the same kind and quantity of labour, as a purchased commodity. There is incongruity in the case as relating to common business : it may be worth while to inquire into the reasons which led to the adoption of so incongruous a measure in the case under consideration. It is well known that persons who serve in the higher offices of the state do not like to be teased or molested with the importunities of inferiors. The surgeons of regiments were often clamorous for promotion, or, if that was not the case, they were disposed to retire from the army in the prime of their years, when a fairer prospect opened to the view in civil life. It was supposed, and the supposition is true, that if the pay of the regimental surgeon was liable to be increased as regimental pay at certain fixed periods of time, to which the eye was supposed always to be directed as something in expectation, he would be less desirous of leaving the public service with the view of bettering his condition in the walks of civil life ; or he would be less importunate in soliciting new rank and promotion in the military for the sake of its emolument. It was thus inferred that he would remain contented, looking for the accession of years to bring the reward of his labours ; if he became grey as a regimental surgeon, he would be deemed experienced whether he were so in reality or not. The case is specious ; but it is not sound throughout. Every one is ready to admit that

an experienced and able regimental surgeon is a great, in fact, an inestimable acquisition to an army either in peace or war; but it does not follow necessarily that a surgeon, though he may have served long, is experienced and eminently able in his profession in proportion to the length of his service: he has only been furnished with the chances of being so; for, if there be not zeal and desire of learning, length of years adds little to either experience or knowledge. If reward or emolument be the portion of a name borne so many years on the muster-roll, rather than of a character distinguished by activity, diligence and discernment, the purpose of the bounty is mistaken. A reward accruing in the manner stated, instead of an incitement, may in fact be considered as an opiate which lays the faculties of exertion asleep. The reward follows the accession of years; merit makes no part of the condition; for whether a regimental surgeon sleep and loiter, or watch and toil, he arrives at the same goal, that is, he attains the same emolument, which is the ostensible pursuit with most men, in precisely the same time in both cases. This does not appear to be well judged: it may have been considered; but the end of it has not been seen, for it implies a condition which has a tendency to deprive the surgeon of his value, inasmuch as it supplies, without toil, the bait of gain which prompted him to earn reward and deserve distinction by exertion. This is an evil which attaches to the case existing: it is evident in itself; it is obviated in the plan proposed. A reward is there held out to the army medical officer; but it is a reward which can only be attained by the actual possession of merit indisputably ascertained, depending on testimonies of service faithfully and ably performed. On the ground of emolument the proposed plan is

equal if not superior to the other ; it has the further advantage that it is progressive in all its parts, in knowledge and rank, as well as in increase of salary. Every rank is supposed to be open to merit, from the lowest to the highest medical station in the army ; the candidate is thus permitted to hope, and he is incited to exert himself in order that he may obtain. He obtains no increase of emolument without increase of rank and extension of duty ; consequently, while he becomes richer, he also becomes more important and more assured of his own value. The two cases stand nearly at a balance of expence as far as respects the public ; it is therefore useful to consider them in their foundations, so that the most effective and the most advantageous may be adopted for the public good. The one now proposed is simple ; it implies a purpose in all its processes ; the one existing is complicated—without a precise object, or ostensible effect as the result of its operation. Such being the case, it will probably be seen by those who take the trouble to consider things with attention, that the mode lately adopted, for increasing the pay of the regimental surgeon, is not the mode the best calculated to animate exertion, or promote that line of conduct which deserves an increase of reward. If not well calculated to insure the medical purpose for which it is intended, it is further to be apprehended, that the actual increase of pay alluded to, as a pay increased regimentally, can scarcely fail to raise unpleasant sensations among the military. A military officer is always chief in a military body, whether it be a regiment or an army. If chief in rank and command, it is a direct inference, and it is customary in most cases, that he be also superior in ostensible emolument. This fundamental rule of military existence is now en-

dangered; for it is liable to happen, and it probably happens often, that the pay of the regimental surgeon exceeds the pay of the commanding officer of the corps. A measure of such a nature is partially calculated to agitate or overturn the usual balance of things; for, as the value of man rises and falls in common opinion according to the amount of his income, independently of all other considerations, it is incongruous, and cannot be held to be well considered, that the surgeon of a regiment should possess a higher regimental pay than the officer who commands the corps. The commanding officer, according to the suggestions of common sense and just reason, ought to be placed above others in all points connected with his official station. He is not so in fact; and though it be incongruous, and actually injurious, that a regimental surgeon should have the nominal pay of twenty shillings per day, while the commanding officer has only seventeen and sixpence, it is perfectly in rule that the brigade surgeon receive a daily pay of twenty shillings, while his commanding officer, the major-general, commanding the brigade, has two pounds. There is thus preserved, as ought always to be the case, a distinction in the official emolument, as well as the official rank of the military officer over all others who are placed under his command. The arrangement now proposed ensures this object; and, while it ensures the object stated, it is in fact more favourable to the medical part of the army than that which now exists.—It is so contrived as to move in harmony with the military, as it ought to do, for it is instituted for its purposes, and it is directly subordinate to its views.

The pay of the commissioned officers of the hospital staff, particularly that of the physician, must be con-

sidered as inadequate to the support of that class of men in a station of due respect, according to the present depreciated value of money in the British empire. The pay is of itself insufficient; but besides the insufficiency of the nominal pay, the curtailments by deduction and the delay in payment further diminish the means of the staff officer, so as to subject him to considerable inconvenience. It does not always, perhaps not often happen that the medical officer has any other funds for subsistence, besides his official salary; consequently, he is exposed to hardship in a protracted date of payment. The payment is rarely made at less than eighteen months after the time of its becoming due. The delay entangles him in accounts with agents, exposes him to various difficulties; for it happens, in many cases, that, with sanctioned deductions, fees of office, fees of agency and interest for borrowed money to purchase daily bread, the nominal salary of twenty shillings per day produces scarcely seventeen shillings net. There probably occurs, on some occasions, a portion of discontent in the mind of the medical officer, who is obliged to borrow money to purchase daily bread after his salary is due. But besides chagrin, there is a further evil in the case of protracted payment: the nominal sum of twenty shillings daily pay, presenting itself to the imagination as wholly a reality, entices him to go beyond the just measure of his income, inattentive to the deductions; he thus falls into debt unwillingly or thoughtlessly. To preclude the occurrence of these inconveniences and evils is a desirable object; and it cannot be supposed to be an object of difficult attainment. If the pay be issued net, and issued when due, in the same manner as is done in the case of the regimental officers of the army, the medical officer, being then master

of his own means, would know exactly on what ground he stands. The mode, which now exists, implies a complication which does not seem necessary or useful. To give credit for twenty shillings daily pay, to deduct two shillings or other sum by various operations, for different purposes, is evidently a complex operation. The labour of a certain number of persons is employed in deducting from one account and adding to another, or in doing things which are not necessary to be done; in short, in doing and in undoing. It is more direct to the purpose to issue the pay net, leaving the adjudged deductions in the treasury. Such measure would supersede the necessity of multitudes of labouring clerks; and, at the same time, preserve the accounts of the public and of the medical officer in a simple form.

of his own means, would know exactly on what ground he stands. The mode, which now exists, implies a complication which does not seem necessary or useful. To give credit for twenty shillings daily pay, to deduct two shillings or other sum by various operations, for different purposes, is evidently a complex operation. The labour of a certain number of persons is employed in deducting from one account and adding to another, or in doing things which are not necessary to be done; in short, in doing and undoing. It is more direct to the purpose to issue the pay net, leaving the adjusted deductions in the treasury. Such measure would reflect the necessity of multiplying of labouring clerks, and at the same time preserve the accounts of the public and of the individual in a single form.

Note.—The above Table exhibits a comparison in the three expeditions which were organized in the year 1904; it ought also to have comprehended that which was fitted out for Holland in the year 1901; but neither the amount of the military force nor the extent of the medical aid were known to me; the author of the military force did not probably exceed thirty thousand men; the medical hospital staff consisted one hundred persons;—by how many the cubic does not precisely know; it may be known by those who have authority to call for official returns. It may have been desirable to have added on the expedition the example of the expedition which sailed in April 1903; but the amount of the force is not known; it is said to have been between five and six thousand; the medical hospital staff amounted to twenty-four persons;—it must be left to military and medical men of real experience of war, who are also possessed of discerning powers of mind, to judge of the efficiency of the plan now proposed; its economy is demonstrated in this Table beyond controversy.—Had the medical staff of the military expedition which was organized in the year 1903, amounted to 100, as a force of about thirty-eight thousand men, had adjusted accounts for the plan proposed, it is evident that the annual sum of forty-eight thousand, thirty-four pounds, for hospitals, would have been saved to the public in the mere article of medical staff, as an establishment more effective in real service than that which actually existed;—it appears in this calculation the very thousand men, embarked on foreign expeditions, do not stand alone; they should possess equal expense in salary for superfluous medical officers. When the calculation is extended to a large army the sum appears enormous.

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CHAPTER II.

*Hospitals.**Site, Capacity, Construction, Equipment, &c.*

THE separation of the sick and ineffective, from the healthy and effective part of society, forms the first professional step in medical arrangement. A provision of hospitals, as suitable places of accommodation, is necessarily preparatory of a just classification of the persons so separated: hence, a provision of hospitals being preliminary, as indispensable for the reception of sick or wounded, it is plain that the site, the capacity, the form of construction and rule of division, the manner of equipment and estimate of expence, are the points which principally attract attention on this important subject.

The site of the hospital under consideration, while such as is judged to be healthy in itself, ought to be so chosen in position as to prove convenient for the execution of business, commanding, by its local advantages, the easy conveyance of such means as are useful or necessary for hospital purposes. The expence of animal labour is husbanded by good arrangement and a judicious choice of position; and, while care is taken that the actual position be innoxious in the qualities

Site or position.

of its own soil, it is equally essential that the qualities of its air do not incur contamination by the vicinity of unwholesome and offensive nuisances which do not belong to it. This is self-evident: it follows of course, that hospitals, in order to preclude the occurrence of this evil, be placed in a clear area, removed from public roads, the boundary of the allotted space guarded by a wall or railing, and protected, by a row of trees, from external annoyances—the pollutions of dust or the violence of winds. Hospitals are supposed to possess ventilation from mode of construction, shelter, and a view of what is agreeable in the face of nature from aspect or position; a cheering prospect of the surrounding country, and protection from piercing winds by the interposition of rising grounds, or lofty trees, are consequently comprehended among the qualities of the situation chosen for the erection of buildings destined for the reception of sick. As it is necessary, in the view of wholesomeness, that the ground chosen for the position of hospitals be dry in itself, or capable of being made dry by draining, it is implied, in such supposition, that it be porous in soil, and that it possess such declivity in formation as gives a brisk current to water.—So much for soil and form of ground: the command of water is another consideration of great importance in chusing a position for the erection of hospitals; and it deserves to be principally held in view in forming

the arrangements which relate to this subject. Fresh water is an essential requisite in preserving purity and personal cleanliness every where: it is indispensable in houses crowded with sick; consequently the site chosen for the purpose proposed necessarily demands a suitable supply of that element; an end to be ensured by the vicinity of a running stream or perpetual spring, pure, wholesome and abundant.

The next point, which follows choice of position, relates to the measure or capacity of the building required for the accommodation of the sick of a given portion of the community, whether civil or military. It is a rule in all good arrangements that means be justly apportioned and measured exactly to the ends. If there be excess, so much is wasted; if there be defect, causes of disease are generated which occasion a multiplied destruction of human life, implying a loss of productive labour in the nation, whether sustained in a civil or in a military station. If the military force be formed into regiments of three battalions; or, if regiments be classed in brigades, consisting of three thousand rank and file according to the suggestion made above, the hospital accommodation provided for the reception of the sick of such force ought not to be calculated lower than for one hundred and sixty persons, in the view that there exists a sufficiency of space to supply the

Dimensions, &c.

means of abandoning and occupying the sick-apartments in succession. Such capacity in the measure of hospitals is absolutely necessary for ensuring prosperous effect in the cure of diseases. The quantity of hospital accommodation proposed in this place may seem to be laid high : it is so in fact ; but it is presumed that the large allowance will be found to be the most economical in the end, when effects are fairly estimated. If the quantity stated be deemed just, the next point relates to the mode of constructing the building.

Construction, &c.

While the capacity of the building is ample for its purposes, the form well contrived, that is, provided with every thing which can add comfort to the sick and contribute to the speedy establishment of health, it is plain that the mode of construction ought to be simple and unadorned, as requiring the smallest possible expence of money. It is an usual custom with most nations to decorate the exterior of their public buildings with costly ornaments. This practice, so common among civilized people, is considered as an indication of taste in the fine arts. The effect flatters vanity, as furnishing something to be looked at and admired ; it therefore usually obtains ; but, though generally prevalent, the end is mistaken where the custom is imitated in the construction of hospitals. These are charitable institutions, provided as the refuge of the indigent part of the

community suffering under the afflictions of disease; or, they are accommodations, provided for military sick, and, as such, acquire no value in being loaded with ornaments of architecture. Hence, if the funds, which are collected for the benevolent or useful purpose be consumed in dressing up decorations, calculated to arrest the eye and extort a tribute of praise on the score of taste or munificence, the end is mistaken—the means misapplied, as producing no return of genuine good. It is generally admitted that hospitals indispensably require to be well ventilated, as well as to possess the means of ensuring a just temperature of heat, and of varying the temperature according as the occasions of the sick require, or the circumstances of the weather may point out. All forms and fashions of magnificence are superfluous; the ornaments of Ionic and Corinthian pillars misplaced. As the real beauties of hospitals consist in interior neatness and propriety, in a provision of means of ventilation ensuring the existence of a wholesome and pure air at all times, these are necessarily the objects to be held in view in planning the design of such structures, and in executing the work in detail. The expence thus directed is economically bestowed; inasmuch as it contributes to restore hands to productive labour by operating beneficially upon health.

Division of
hospital.

If hospital accommodation for one hundred and sixty persons be deemed the just measure of accommodation for the sick of a military circle of three thousand men, the division of the space into three compartments, as suitable to the conditions of the different classes of sick, is obviously convenient; it is demonstrably found to be useful in trial, giving the external appearance and communicating the internal reality of a systematic arrangement which facilitates the execution of public business. The subjects of hospital treatment are various, but they are usually divided into three general classes, viz. medical, surgical, and convalescent. The proportions in hospitals consisting of one hundred and sixty patients may be supposed to stand as follows, viz. sixty medical, sixty surgical, and forty convalescent. The proportions assumed in this case will frequently be found to be near the truth, and, presuming on the general accuracy of the supposition, it is proposed that the hospital arrangement should be adjusted according to this supposed rule.

It is a fact, which no one will pretend to deny, that a thorough ventilation is an indispensable condition of a well-constructed hospital. It is plain that hospitals, in order to possess thorough ventilation, can only be allowed to consist of a single range of building; and it is advisable that they consist not of more than two stories, as

preventive of a too great accumulation of sick in a given volume of atmosphere; for it is frequently seen that mere accumulation contaminates the air, depriving it of salutary qualities, or producing effects by which the progress of cure is retarded, the chances of relapse multiplied, and their dangers increased. As it is conducive to the ultimate object of the institution of hospitals, which is the speedy and effectual recovery of health, that the hospital building consist only of a single range; so it is convenient, for the execution of the business in all its details, that the whole of the structure, whether intended for the reception of sick and convalescents, or for other purposes connected with the business of the sick, be thrown into the form of a square,—the ranges not closed with each other at the extremities. The compartments for sick and convalescent form three sides of the square; the fourth comprehends the apartments, destined for the various purposes connected with admission and dismissal, bathing and messing, stores of clothing and lodging for officers and servants. A range of building of one hundred and twenty feet in length, calculated to accommodate sixty medical patients, forms the right side of the square; a range of similar dimensions, for sixty surgical, forms the left. The other two are of similar extent. The lower part of one of them is allotted for the reception of stores; the upper part occupied by convalescents:

the other comprehends apartments extending from the porch on either side, adapted to the purposes of purification and other matters connected with what is necessary for the service of patients at the time of their admission into the hospital, and during the progress of their cure, viz. messing-rooms, bathing-rooms, &c.

It is to be observed in the first place, in proceeding to describe in detail the parts of the projected hospital, that the entrance is by a gateway or porch in the centre of one of the four sides or ranges alluded to. On each side of the porch are receiving-rooms, sixteen feet square, viz. one destined for the reception of medical patients on one side; one, on the other side, in which surgical patients are examined, classed and equipped for their proper apartments. These rooms are to be provided with stoves, furnished with benches or setees covered with palliasses or matrasses for the temporary repose of the patients during the act of examination, classification and equipment for their allotted wards. Opposite to the receiving-rooms, and divided by a passage of six feet, are the bathing-rooms—sixteen feet in length and ten in width; in each of which are two structures of terrace composition adapted to the purposes of warm and cold bathing. The bathing-rooms are furnished with water-pipes, with the necessary appendages of cisterns and furnaces; in short,

with every apparatus which is necessary or useful for conducting the important process of bathing in all its variety of forms. On the same line with the receiving-rooms are dressing-rooms of the same dimensions as the receiving-rooms, equipped with stoves, carpets or mats, setees or benches covered with matrasses and blankets; the apartment, in short, being made comfortable for the temporary accommodation of the sick with every necessary provision in the full extent. On a line with the bathing-room is a wardrobe, ten feet in width, sixteen in length, containing such parts of clothing as are necessary for the first equipment of the patient. As a room of this dimension exceeds what is wanted for a store of clothing allotted to this limited purpose, a partition may be run across, so as to afford a sleeping-room for the porter on one side; a similar accommodation is vacant on the other. Adjoining to the dressing-rooms on the same line, is a sitting-room on one side for the resident hospital assistant surgeon, a sleeping-room on the opposite of similar dimensions. Of the remaining space, thirty-five feet on each side,—one half may be set apart for messing-rooms for the convalescents or such patients as are allowed to leave the sick apartments at meal-time; the other division, furnished with water-pipes and water-troughs, may be converted into shaving and dressing apartments for the use of such patients as are in a condition to walk about

and effect their own purification. At the extremities of this range is a dead-house on one side, a store-house for fuel on the other,—detached or placed in the interval—with doors facing outwards; likewise two necessaries detached,—with a covered way and brick pavement leading to them. The upper story of this division is not supposed to be occupied in ordinary, but, divided into wards and regularly equipped with hospital furniture, it is reserved for occasions of unusual sickness or other temporary purposes.—Such is the projected division of the outer apartments of hospitals of the dimensions stated. The quantity of accommodation is sufficient in the whole; the distribution of the parts will, it is presumed, be found to be convenient.

Arrange-
ment of
wards.

The quantity of accommodation required for sixty medical patients in one building of two floors or stories, allowing six feet for each person, may be calculated at one hundred and twenty feet in length, as admitting of sufficient intermediate space under the roof for all the necessary purposes of the sick and their attendants. A ward, thirty-six feet in length, contains space according to this rule for twelve patients in the acute stages of disease. If the length be extended to forty feet, sufficient room will be thereby left for the beds of a female nurse and male attendant. It is indispensably necessary, in order to insure the chances

of good attendance for the sick, that the attendants actually sleep in the sick apartments; it is also desirable, on account of decency, that the bed-place of the female nurse be separated from the body of the ward by a curtain of painted canvass. When this is done, the means destined for the purposes of the ward may be considered to be in some measure complete and independent; and, when done, according to the manner proposed, it is obvious that accommodation for twenty-four persons of the description mentioned is duly provided for, with space for nurses and attendants, in two wards, each consisting of a roof of forty feet in length. These two wards occupy eighty feet of the one side of the square: of the forty remaining unappropriated, ten, or probably twelve are consumed in a staircase: a space is also required for two water-closets, and for a private bathing-room for the accommodation of those persons who cannot conveniently bear the fatigue of being carried to the common bath. It is understood that two large wards in the upper floor are set apart for the reception of persons in the early stages of acute diseases, classed methodically according to their characters. The febrile diseases, disposed in these wards, are the more common and frequently the more numerous class of military diseases; consequently, they require the greater provision of space. But besides the ordinary febrile diseases, accommo-

dated in the apartments now described, there sometimes occur others of a peculiar kind—specifically contagious in their nature. Such require peculiar cares and attentions: they are dangerous to others by the quality which they possess of multiplying their kind; consequently, they require to be separated from the mass and secluded in distinct apartments. The space remaining, after what is consumed in a staircase, baths and water-closets, probably not less than twenty feet, is converted into one or two apartments destined for the reception of diseases of the above description, when they do occur.—Among the class of diseases requiring such separation, small-pox, measles and fevers of the erysipelalous tribe hold an eminent place.

The upper floor of the medical division of the hospital is set apart, as has been observed, for the reception and accommodation of persons in the acute stages of disease; the lower part is intended for those who are in the first stages of recovery. These do not require nurses or sick attendants to be present in the wards during the night; consequently, a length of thirty-six feet affords sufficient space for twelve beds. Instead of a reserve space of forty feet, there will be here a space of forty-eight, which, after allowance made for a staircase and water-closet, affords space for two wards destined for the reception of those persons,

who, being extremely ill, require extraordinary care in nursing; or, who, being peculiarly affected, cannot be allowed to remain in a common ward on account of the impression which the dangers of their condition might make upon others. The duty of nursing and attending such falls to the lot of the nurse and male attendant of the lower wards; for in these no person is allowed to remain, who has not attained a certain progress of recovery; consequently, who is not exempted from the assistance of a sick nurse.

It is admitted on all hands to be useful, even necessary towards the production of good effect, that the space destined for the reception of acute diseases be divided into different wards, for the purpose of a proper classification of different maladies. Such division, though convenient on several accounts in all hospitals, is not so indispensably necessary in hospitals set apart for the reception of ailments requiring surgical treatment. A surgical ward, eighty feet in length, calculated to receive twenty-eight persons, does not ordinarily demand a rigid division of its subjects, on account of the dangers which they have the chance of communicating to one another. As it does not therefore ordinarily happen that the separation of surgical patients is commanded by threatening dangers of contagion; so it is plain that something will be gained in economy, on the

head of attendance, by bringing the greater number together under one roof. The surgical ward may therefore be of such dimensions as to receive twenty-eight patients,—such, for instance, as are confined by ordinary or slight complaints. In this manner, a space of forty feet is left unappropriated, comprehending space sufficient for a water-closet and for two rooms on the upper floor, one of which may be provided with a skylight and converted into an operation-room, the other, destined to receive the persons who have undergone important surgical operations, and who require seclusion and careful nursing during the subsequent part of the cure.—This relates to the divisions and arrangements on the upper floor; the surplus space on the lower floor may be converted into one or two apartments, suitable for the reception of those cases of malady which call more particularly for separation from others.

Three sides of the hospital square are supposed to be constructed with a specified purpose in view, and occupied in the manner described; a fourth range of similar dimensions with the others, the upper floor set apart for the reception of convalescents, the lower for stores and offices, completes the form of the building under consideration. The offices, comprehended in this range, are the steward's store-rooms, the apothecary's store and dispensary with lodging apartments for

some of the necessary servants.—In the interval, at one end of this range is added a kitchen; at the other, a wash-house and drying-house. These are detached, the doors facing outwards. A plot of ground for exercise, some gravel walks and scattered trees for shade and shelter are comprehended in the plan now presented—within the wall or railing, but without the square of the hospital. The interior square, besides a gravel walk, possesses a shrubbery in the centre, as a means of affording some refreshment and relief for the eye of such patients, as are not in a condition to be otherwise amused with a view of the country.

The extent and general division of the building being such as is mentioned, the manner of construction, and the rule of fixing the just dimensions of the wards are the next points of importance which present themselves to be considered on this subject. The length of the range is stated to be one hundred and twenty feet, the breadth, including the walls and comprehending a gallery of seven feet, cannot be rated at less than thirty-six. The hospital is supposed to be built of brick, solidly and well executed; the foundations well laid and well drained; the galleries continued round three sides of the interior square, paved with brick and enclosed with ballustrades five feet high. The height of the roof of the

Form of
construc-
tion, wards,
&c. &c.

wards is fourteen feet; the width about twenty-five; the inside of the walls is plastered, highly polished, painted, even varnished in such manner that it may be washed with soap and water as often as is necessary; and thereby freed of all adhering matters of contagion:—green, or sky-blue, is the most grateful colour.

Ventilation.

As the polish of the walls, which does not readily admit of the adhesion of the contagious matters of disease, gives facility of action to the means which are employed in preserving the purity of sick apartments; so thorough ventilation, whether ensured by means of doors and windows or by the operations of the heat of fire, is the cardinal remedy to be employed in preventing contamination of air; an effect which results from the breath and emanations of a mass of diseased animal bodies confined in narrow space, and a cause, when produced, which serves to propagate disease to many and to resist the perfect recovery of health in all. In the wards now described, calculated for twelve sick persons, disposed in two rows, six windows on each side are considered to be the just and requisite number. The number here given will not probably be objected to: the manner of placing them, so as to obtain the full benefit of ventilation, is a matter of high consequence; but it does not appear to be rightly understood in this kingdom by those

who have been intrusted with the construction of hospitals for the purposes of military sick. The noxious part of the atmosphere, or something dissolved or suspended in the atmosphere possessing a noxious quality, seems to be among the heaviest portions of the air; it consequently keeps its station near the floor, accumulating in corners and in the least agitated parts of the circumference of the sick apartment. If it be intended that this noxious atmosphere be moved, agitated, and finally expelled from the interior, a process, which alone deserves the name of thorough ventilation, it is plain to every man's common sense and reason, that such effect only can be attained by the agitation of brisk currents of air, entering at the level of the floor and sweeping all stagnating matters to a place of issue at a similar level. This purpose, which may be termed thorough ventilation, and which is so essential to medical success in hospitals, can only be effected by the use of windows formed in the manner of Venetian windows, reaching to the level of the floor, securely protected from accidents on both sides by a netting of wire or bars of wood.

The ventilation of sick apartments is ensured, in warm and dry weather, by the proper management of the means which have been described above. In cold, damp and foggy weather, the admission of external air is injurious, rather than

Ventilation
by means
of fire.

beneficial. Being injurious, it is evident that it ought to be excluded, or that it ought to be altered in its qualities by some internal rectifying process. This may be termed artificial ventilation produced by artificial causes acting on temperature, principally effected by a judicious management of the heat of fire. As the end is important, the nature of the means ought to be well studied. If the steps of the operation be well understood, the process will be conducted effectually for the attainment of purpose, and economically for the saving of money. If it be intended to warm and dry the air of a sick apartment by the action of fire, and thereby to change its qualities, it is obvious that the fuel-apparatus should be so disposed as to diffuse the whole of the effect into the body of the apartment, more particularly contrived to direct it upon the surface of the floor. The heat, when thrown upon the surface of the floor, rarefies the lower atmosphere of the ward; and, as that which is rarefied ascends, the noxious air, specifically heavy in its own nature, is thus rendered artificially light. It mounts upwards in virtue of its lightness; and it finally escapes at certain openings or windows near the ceiling, so contrived as to turn upon an axis, which is moveable by means of a rope hanging down into the ward and placed under the management of the nurse. Rarefaction, or the effect here described, is produced by means of a fire-stove placed in

the centre of the room,—the material of copper, as better calculated to reverberate the heat, the construction so contrived as to diffuse the effect principally into the lower atmosphere of the ward. The proper adjustment of this matter is a concern of high importance, however trifling it may seem in appearance. If the stove or fire-place be removed to one end or one side of the apartment,—drawn back into a recess, or, if it stand high, it is plain that the greater part of the heat must escape by the chimney, instead of being diffused into the interior and lower atmosphere of the room: fuel is thus consumed without the benefit of effect. If the proper disposition of the fire-stove or chimney be an object so deserving of consideration as it is stated to be, the kind and quality of the fuel also call for attention. Wood, or a mixture of wood with coal seems to be the best calculated for the useful purpose. Fuel of this description gives out a brisk and sudden heat, thereby operating a movement in the stagnant air. This constitutes ventilation, the process that prevents the aggregation of noxious matters which become virulent by concentration. But, besides the prevention here noticed as resulting from the judicious management of fire, the influence of sudden and brisk heat producing sudden alternations of temperature even occasions, in some instances, a new movement in the languishing actions of the animal body as an effect of changed tempera-

ture; thereby producing a favourable change in animal health.

Water.

The proper disposition of fire-stoves and the proper management of fire for the purposes of ventilation are of high consideration; the proper distribution of water, as supplying the means of effecting personal ablutions and ensuring domestic cleanliness and propriety, also deserves attention. As the command of water is so essential to this important purpose, it is scarcely necessary to say that water ought to be conducted in ample quantity to every principal part of the building,—to the sick wards, the water-closets, the baths, the kitchen and wash-house. The estimate of expence may probably bar the execution of this salutary provision in many cases; for, people, who are accustomed to calculate only for the present time, do not always consider what is eventually economical. If they did, they would not fail to see that, if the aggregate estimate of the expence of labour in carrying water for a term of fifty years for the needs of hospitals be fairly made, the plan proposed will be the most saving of money, and in all respects the most effective of purpose.

Baths.

The common baths, as observed above, are placed at the porch, being thus convenient for the necessary purifications at the time of the pa-

tient's admission into the hospital. There is a hot and cold bath on each side,—one for the medical patients, one for the surgical patients and the convalescents. These are general baths for common purposes. Besides these, there is a smaller bath, in each of the upper floors, for the accommodation of such persons as cannot be safely or conveniently moved to a distance from their beds. The most economical form of bath, as the most durable; and the cleanest, as consisting of one continued surface, is the terrace composition, highly polished. The baths thus constructed are supposed to be complete in all the necessary apparatus, particularly in cisterns, furnaces and water-pipes with cock and key, so that the whole operation of bathing may be conducted with facility and with effect, occasioning little extra labour to the attendants.

The water-closets, which are placed between the medical wards for the purposes of the sick, require to be supplied with water most abundantly. Profusion is generally an error; but abundance, even profusion of water for the hospital water-closet is desirable. Without the command of water in ample quantity, the use of water-closets is inadmissible in hospitals filled with sick men, undergoing the discipline of cathartics, or suffering from diarrhœa or dysentery. But, besides abundance of water conveyed in a suitable man-

Water-closets.

ner to the water-closet for the ordinary purposes of purification, a stone or marble water-urn with a turn-cock and bason, sponges and towels are to be considered as means prepared for the purpose of partial ablution; a practice, not only grateful and refreshing, but, when properly managed, highly serviceable in a medical view in many cases of malady:—the practice is new in this country, but it is not dangerous. The water-closet is moreover to be furnished with a carpet or straw mat on account of warmth, with a settee on which a person may recline in the event of faintness, with a stove or chaffing-dish of fire in cold weather, and with a perfumed vinegar lamp at all times.

Kitchen.

The kitchen or cooking-place for hospitals is necessarily of importance; it consequently requires arrangement in its construction. Besides an abundant supply of fresh water, with proper channels for carrying off whatever is useless and offensive, the cooking utensils must be so disposed in their order as to be put in action with the least possible expence of fuel. The dinner constitutes the great mess, implying the greatest labour of cookery for hospital subjects. The bill of fare, or materials of hospital diet are few in number; but, though few in number, it is often useful to dress them differently, so that they may be rendered palatable to every taste, and nourishing in their nature without loading the stomach

by quantity. Bouillon or beef tea is the common allowance of those who are in the acute stages of disease, broth and boiled meat the portion of those who are ranked among the recovering and convalescent. The diets just now mentioned are the common forms of diet in military hospitals: they are upon the whole wholesome and good; but it is often grateful, and it is sometimes useful to indulge the convalescent with stews and harri-cots, or with roast meat and beef-steak; the sick with puddings, tarts, custards, jellies, &c.—hence a hot hearth and an oven are necessary appendages to the hospital kitchen.

The washing department of the hospital, besides every proper convenience for facilitating the process of actual washing, such as boiling-coppers and washing-troughs, requires an arrangement of apparatus for drying, mangling and doing up in a suitable manner the different part of furniture and apparel which the purposes of the sick demand. This should be well considered; and, it should be held in mind, that the apparatus which saves animal labour, though expensive in the first instance, is economical in the end.

Wash-
house.

The hospital being constructed in the manner described, its equipment with useful and convenient furniture is the next object which attracts the attention. Among the necessary parts of fur-

Equipment.

niture, the bedstead is principal, as essential to comfort and implying considerable expence. The iron bedstead is held by most people to be the best form of bedstead for hospitals, as being less susceptible of the adhesion of contagious matters of disease than most other materials: this is so far true; but it must be granted at the same time, that an iron bedstead, in order to be complete in this view, must be furnished with a bottom part of netted wire. As such it is expensive, as well from the value of the material as from the quantity of the workmanship; and, on that account, it cannot be procured with narrow funds. It is heavy in its own nature; and, as such, it is inconvenient. It is further, if formed of cast iron, liable to be broken; when broken, it is not repaired without considerable expence. When these disadvantages are fully considered and fairly estimated, as iron has no exclusive quality in resisting the attachments of contagious matter to its surface, which may not be given to other materials, it may be asserted that bedsteads, made in the fashion of cot-frames, the wood sound and well seasoned, as they form a convenient bedstead, so it is believed that they will prove in trial to form a preferable one to the other, particularly for military hospitals; inasmuch as they are more portable, equally firm and strong, and not more liable to be polluted by the contaminations of disease. The cot-frame is made of well-

seasoned wood, strong, but not clumsy in form, painted green or light blue. In the angles of the frame are round holes, admitting the passage of pillars, also slits about one inch in length, admitting the passage of a wire or iron peg, fixed in the upright part of the pillar. The small or upper part of the pillar being passed through the hole, the wire or peg through the slit, a half turn of the pillar brings the wire or peg to right angles with the slit; the extreme points of the frame are thus pressed closely between the wire in the upright and the shoulder of the supporting pillar, so that the fabric is firm and secure as if it were a solid piece of wood. The upright part of the pillar is eighteen inches high, serving as a stretcher for a head and foot cloth of canvas, tick or sacking. The guards of tick or sacking, at the head and foot of the frame, turn off the cold air in one case, and prevent the pillow and bedclothes from sliding away in the other. The bottom part of the bed consists of canvas or sacking, doubled at the edges in the view of lasting longer, extended over the sides of the frame and laced underneath. When the frame is equipped in this manner, a blanket doubled under the sheet will be found to form a bed of sufficient comfort, for such persons as are not much reduced in flesh by continuance of disease or other circumstances. Where straw, or other materials for filling the bed-sacks or pallasses cannot be easily procured, the expedient

here mentioned is substituted without inconvenience. The bedstead now described is portable, for the pillars may be withdrawn and packed up behind the lacing, together with the pillow, the head and foot cloth. The frames, packed up in half-dozens with whatever belongs to them, are in this manner ready for use, easily transported, and not liable to be injured.—The furniture of the hospital bed, according to the proposed plan of equipment, consists of a palliasse for straw, preferably of cotton cloth as cheaper and more durable than linen, a bolster-case of the same material, a hair pillow (tick) eighteen inches long and twelve broad, with a linen slip or cover of a quality finer than the sheets. Straw is the usual material employed for filling the hospital palliasse; and fresh wheaten straw, while it affords a genial and pleasing warmth to the sensations, is wholesome and invigorating to animal health. Straw forms the ordinary bed of the sick soldier in European countries where straw is common: it is further necessary, that a certain proportion of hair mattresses be provided, in addition, for the accommodation of such persons as are reduced by sickness, or so circumstanced by disease, as to stand in need of a softer bed than simple straw affords. The hospital bed, whether straw palliasse, mattress, simple canvas or sacking of the cot-frame laced underneath, is covered by a blanket doubled. The sheets are of linen, half

bleached, or of cotton of a good quality—in all cases well washed and mangled;—the pillow-case, as observed above, is of a quality somewhat finer than the sheets. One blanket is sufficient in summer; two are necessary in winter in European climates: there is no occasion for any in tropical countries, except as a cushion to increase the softness of the bed. The coverlet is of twilled cotton cloth,—the colour chocolate or light blue.—A fir table or night cupboard is placed between every two beds, furnished with a receptacle at each end for a chamber-pot, and a peg or partition for the reception of the slippers:—it is covered with a napkin of suitable quality.

The personal necessities of the hospital patient are few in number, but they require to be fitted to their purposes with judgment. In the first place, every man who is received into the hospital, after undergoing a complete personal purification, is furnished with a clean shirt, moderately fine,—of linen or cotton according to climate and circumstances of subject,—properly dressed or mangled, and in all cases large and long, reaching to the ankle or middle of the leg. Besides the shirt now mentioned, those, who are in the first stage of acute disease, are furnished with a *robe de chambre* and pantaloons of striped cotton cloth, a white cotton night-cap, a linen handkerchief, and a pair of listing slippers, commonly called

Personal
necessaries.

snow-shoes. Such is considered to be the personal equipment of the sick, in the acute stages of disease where the subject is chiefly confined to bed; in the surgical wards and in the convalescent wards, where the patients are permitted to walk about for the sake of air and exercise, instead of the cotton *robe de chambre*, the hospital clothing consists of a gown or riding coat, a waistcoat and pantaloons of grey duffel as a light and warm material,—to which are added socks and shoes:—the woollen material supposes an European climate; in tropical countries the cotton night-gown is preferable, even for convalescents.

Utensils.

The utensils provided for the purposes of the sick are various. Among the first, are jars or vessels of a proper quality for preserving the drinks of the sick cool and pure. The drinks consist of pure spring water, barley or rice water, vinegar and water, cream of tartar and water sweetened with sugar usually called imperial, whey, and occasionally medicated drinks impregnated with the juice of herbs. Pure water is generally the most grateful, consequently the best drink for persons who are in the acute stages of fever. As it is in itself the best drink, it is essential that it possess all the advantages which, in its nature, it is capable of possessing, particularly that it be cool, pure and pleasant. That it possess these

qualities in perfection, it is advisable that it be preserved in covered jars, furnished with turn-cocks, and formed of the porous material which permits evaporation. This is particularly necessary in hot climates and in hot weather. It is desirable that water be cool and fresh at all times: hence it is indispensable that it be renewed every morning and evening, and that the jars be emptied and carefully rinsed twice a day, previous to renewal. The jars for the drinks are utensils considered as the common property of all: every patient has occasion for others on his own individual account, for his own convenience and use. The chamber-pot stands among the first. Pewter is the best material for this purpose; because, while it admits of being scoured and kept clean by means of sand, it is not liable to be broken by slight accidents. Soup, gruel and tea constitute essential parts in the diet of sick persons: the porringer, preferably the pint porringer, is the most convenient form of vessel for the distribution:—it answers the useful purpose in all cases without adding to the incumbrances by superfluity. In stationary quarters, it may be of queen's ware as the neatest and cleanest material, and not high in price; in the field on actual service, it ought to be of double block tin, with such variation in width as to admit of being packed up in nests by half-dozens. Besides the porringer, a plate of double block tin, a spoon of

polished iron or hard metal, a knife and fork, a half-pint glass tumbler are to be numbered among the necessary messing utensils for hospitals. These may be thought to comprehend every thing which is wanted in the present case for the purposes of messing; the occasions of the sick call for other implements which are useful or necessary on other accounts. Among these are to be reckoned combs—horn and ivory, large sponges for washing the body, large wash-hand basons, towels, urinals, blood-porringers, bed-pans, night-chairs, offal tubs or buckets, mops, brooms, cleaning brushes of different kinds—in a given proportion according to the size and wants of the ward, tea-kettles, and tea-pots, platters, trays, and an equipment of kitchen apparatus so contrived that the dinner and other diet may be conveyed to the sick apartments hot and savoury—in a perfect state of cookery. It is almost unnecessary to mention that there ought to be two covered frames or close chairs for the conveyance of sick persons, one covered bier for the removal of dead; straw, or other mats at all the doors of the hospital: in short, the provision of every necessary, which, by adding to the comfort of the sick, may be supposed to forward the cure of disease.

Estimate of
quantity of
furniture
and uten-
sils, &c.

As many articles of hospital equipment, particularly personal necessities, are rendered impure by the contact of animal bodies, there conse-

quently occurs a necessity of change. Personal cleanliness demands it, and personal cleanliness is essential to the prosperous course in the cure of disease; hence due provision is to be made on this head in order to ensure the useful effect. It is an object of some importance, with a view to economy and even to medical success, that the quantity of articles, requiring change, be apportioned with such judgment to the needs that there be no wasteful superfluity or injurious defect. The rule varies in almost every different article; for scarcely any two things undergo the same precise degree of friction in a given time, or are of the same degree of durability in their nature. It is not possible to be precise on this head; but a general view is attainable. It may therefore be thought to be useful to give an outline of calculation on general grounds for an hospital consisting of fifty persons,—the probable sick of an ordinary battalion.—The following will, it is presumed, leave no chance of defect under the most rapid changes that can well be supposed to take place, viz.

Bedsteads	- - - - -	55
Palliasses, bolsters, pillows and pillow-		
slips, sacking bottoms	- - - - -	110 each
Shirts	- - - - -	150
Sheets	- - - - -	150 pairs
Blankets (in Europe)	- - - - -	300
Ditto (in hot countries)	- - - - -	110

Coverlets	- - - - -	110
Night-caps	- - - - -	110
Gowns, whether cotton or duffel	-	110
Pantaloon or trousers	- - - - -	110
Pocket-handkerchiefs	- - - - -	110
Napkins for the tables	- - - - -	60
Plates	- - - - -	55
Knives and forks	- - - - -	5 dozens
Spoons	- - - - -	55
Porringers	- - - - -	55
Glass tumblers	- - - - -	50
Tea-kettles	- - - - -	2
Tea-pots	- - - - -	2
Cups and saucers	- - - - -	1 dozen
Slippers	- - - - -	55
Large sponges	- - - - -	5
Large towels	- - - - -	12
Large basons	- - - - -	4
Blood-porringers	- - - - -	5
Combs (sets)	- - - - -	6
Offal tubs or buckets (one for each ward)		4
Bearers, or chairs for the conveyance of sick	- - - - -	2
Covered bier, for the removal of dead		1
Mops, brooms, long sweeping brush, hard scrubbing leaded brush—one for each ward	- - - - -	4 each
Trays (one for each ward)	- - -	4
Table-cloths (six for each messing room)		12

If the hospital be equipped after this manner and in this proportion, it will not suffer want of any thing useful for a given time; but the articles of equipment wear out daily, and the period of duration varies considerably in every different article. It is difficult, if not impossible, to attain absolute precision on this head; but the following estimate will perhaps be found not to be very erroneous, if the economy be every where rigid and correct, viz. shirts, night-caps, gowns and trowsers to be renewed in eighteen months; sheets, bolsters, palliasses, pillow-cases, sacking bottoms, in three years; blankets and coverlets, in six. The cleaning implements last in proportion to the use that is made of them; glass and crockery according to the care that is taken of them; consequently it is just, and it is a common rule, that, where glass vessels are broken in military hospitals, the loss be made up by the person in whose hand the accident happens.—But this subject of estimate is obscure: the utility of calculating the tear and wear of military hospital equipments does not appear to have been duly considered by the medical officers of the British army. The estimate made in this place does not completely supply the defect. It is not pretended that it is precise; it is only presumed that it is near the truth; and it is believed on fair grounds of reasoning that about one sixth part of the original cost is sufficient to meet the

annual expence of repair in tear and wear, in all ordinary circumstances of service.

Necessity of
space in
hospitals.

An hospital of the dimensions described above, as calculated to receive one hundred and sixty patients, is without dispute equal in extent to the ordinary medical purposes of a military body of three thousand men, assembled under a regimental or brigade name in stationary quarters, in European climates. It is admitted that hospitals are indispensable for the accommodation of military sick ; and, this being so, it is a matter of the first importance in ensuring a fortunate effect in the business of cure, that the space allotted for the accommodation of such persons be ample, so that there exist means of occupying, of evacuating and purifying the wards in succession. On this ground it follows in the just reason of things that, wherever barracks are erected for the reception of troops, hospitals are to be provided for the sick according to the proportion here estimated, or such other proportion as may be found in better experience to be more accurate. It is witnessed in multitudes of instances, that the air soon becomes impure in apartments which are constantly occupied by sick persons, notwithstanding the employment of every possible preventive care. It is not necessary in such cases, that the air be contaminated with distinct seeds of contagion ; it is enough that it lose the vivifying principle which

conduces so much to the rapid and perfect recovery of health. The case has been often submitted to experiment; and it may be considered to be proved to demonstration that the evils of crowding sick in hospitals, for the sake of economising space, are prodigiously great, expensive of life and consequently of money to an incalculable extent. In crowded hospitals, all the aids of the medical art, applied in its best form, are not powerful enough to counterbalance the increased activity of morbid causes resulting from the mere act of undue accumulation. This is sometimes witnessed in hospitals which are considered to be well constructed and well conducted in management; sometimes in hospitals appropriated to the reception of the sick of the civil part of society, frequently in hospitals set apart for the reception of the sick of the military. It is no unusual occurrence that common sores degenerate into gangrenous ulcers, or that a gangrenous disposition, instead of a healing process, manifests itself after the amputation of limbs or other surgical operation in hospitals which possess even a high reputation. Where such is the case, and it is not unfrequent, there exists evidence of a corrupted atmosphere infinitely injurious in its effects—a cause, in fact, of greater mortality than the total absence of medical and surgical assistance in an open and deserted country. When the air is thus contaminated and impure, diseases sometimes

spread rapidly through the whole extent of the corrupted circle. Corruption or impurity is an effect arising from undue accumulation of diseased subjects in narrow space; the rapid propagation of particular forms of malady depends upon inexplicable qualities of the atmosphere, active at one time, dormant at another—from a cause and after a manner, not yet rightly understood. It is sometimes seen that the radical cause actually exists, but that subjects within its ordinary sphere lose susceptibility to its impressions, whether depending on inexplicable qualities of the subject or atmosphere, is uncertain. In some of these cases the activity of the natural functions is impaired, insomuch that there is neither perfect health nor yet disease of a defined character.—But such remarks may be deemed foreign to the subject;—it is in point to observe, that, when the infectious or propagating character exists in force, and when contagions however generated or imported appear in hospitals, the contagion diffusing itself around and fixing upon those who are within a given sphere of distance manifests the accession of an adventitious cause produced by error, and often permitted to multiply and extend by ignorance or want of energy to counteract its effects. It thus overwhelms minor resistances and spreads destruction to a wide extent. It cannot be too often repeated (for it is necessary that it be strongly impressed upon the mind of

every one intrusted with the management of hospitals or connected with their duties), that a greater loss of life results from the act of accumulating sick persons in narrow space, though all the means in possession of the medical art be administered with care in counteraction, than by a total neglect of all professional assistances of the art, where the diseased subject is not denied the benefits of a pure and freely circulating atmosphere. It has been witnessed frequently, particularly in military service, that persons ill of contagious fevers, crowded in hospitals in an unjust proportion, die to the amount of one half of the numbers; that persons of the same class and description, suffering from the same disease, dispersed in barns and ill-sheltered quarters, even exposed in the open air, sometimes receiving the aids of the physician, sometimes passing through the whole stages of illness without it, do not die in a higher proportion than one in ten, sometimes than one in twenty, or even thirty. This fact, and accident has furnished many proofs of it, shews clearly that great mischiefs arise from cares misunderstood; particularly that an undue accumulation of sick in hospitals, however magnificent in the exterior these hospitals may be, is enormously destructive of human life. The case is true, but it has not been considered in its true reasons. The miseries of diseased objects, as received into general hospitals, are covered from the public eye; the sen-

sibilities of the multitude are consequently less frequently shocked with pictures of distress; there is however on many, perhaps on most occasions, a disguise of misery or mask of destruction, rather than a relief from suffering or an economy of life. It may be affirmed confidently, that, unless hospitals be spacious, well constructed and well conducted, however benevolent the design of the institution may be, the end will not be a benefit to society, if saving the life of the poor and miserable be deemed beneficial to the community. It is a fact not to be denied that adventitious mortality sometimes arises in the hospitals of great cities from the impure air of crowded wards; it arises frequently in the hospitals of armies, where acute diseases constitute the mass of the sick. This is confirmed in the history of most European wars: it was never confirmed more strongly than in the hospital history of the late war, as exemplified in the British army in different parts of the world. Here sick soldiers, heaped together in ill-ventilated apartments, in transportships or beylanders converted to the purpose of hospitals, perished in great numbers through the effects of a mistaken care. The loss has been felt to a grievous extent. It is therefore necessary, in the hopes of avoiding a recurrence of similar evils, that the cause be explained, as well as that the fact be stated. Accumulation was the source of the mischief: hence it follows, that space, which

is so essential, be preserved between the beds in hospital apartments most religiously in all cases, that the wards be evacuated in succession, fumigated with muriatic acid, washed thoroughly and ventilated completely at frequent intervals, the environs of the building being at the same time kept clear of all causes of pollution which have a tendency to corrupt the air or intercept its free circulation. If this, and similar discipline of economical administration be rigidly executed in hospitals, the establishment of such institutions will be useful in society, whether civil or military; if this be not so, the accumulation of a mass of sick, which has usurped the name of hospital, rarely fails to generate a peculiar cause of its own manufacture, the effects of which are destructive of life in a higher proportion, than the effects of the evils arising from the want of the covering of a roof, or from the want of the benefits of the medical art:—the advantages of the institution of hospitals are deceptive in such cases; the evils are real*.

The provisions detailed above are the principal provisions, which require to be considered in the construction and equipment of hospitals. The omissions which exist in this outline, being seen under the execution of the work, may be easily

Expence of
equipment.

* See Note A.

supplied. An estimate of the expence of construction can only be made by architects, or persons professedly acquainted with business of this nature ; the estimate of the expence of the moveable furniture is more easily attained, for the materials are found in the common market, and persons of common capacity are competent to form judgment in the case. Economy is in all cases a main hinge of business ; but it should be well understood by those who undertake to equip hospitals ; that it is not the commodity which is cheapest in the first cost which proves to be cheapest in the end. As quality is better than number in hospital equipments as well as in other things, it will be a good rule, as being an economical one, that all hospital equipments be of a genuine and substantial quality rather than of a low price. When substantial, they will be durable, the term of duration calculable with some certainty : superfluity will thus be avoided, the chances of defect, from the contingencies to which bad materials are liable, being rare *.

Temporary
hospitals.

The establishment of regular hospitals is only applicable to the purposes of persons in civil life, or to military garrisons in times of peace. The scene of war is liable to change daily ; and, as hospitals constructed according to a regular plan,

* See Note B.

and equipped with all the conveniences noticed above, cannot be supposed to follow in the rear of a moving army, it is plain that hospital accommodations, for the reception of the sick and wounded in the field, can only be temporary accommodations, the fitness or unfitness of which will much depend upon the authority delegated to the chief medical officer, upon the professional knowledge which he possesses, added to the vigour and zeal which he manifests in executing his duty. The leading points in the choice of houses for temporary hospitals consist in the easy command of water, and in the means of thorough ventilation. These points must therefore be constantly held in view. Where they do not exist in the original position or construction, they must be created and completed by the effect of labour; for hospitals, without abundance of pure water and the circulation of pure air, are likely to be productive of more fatal effects to an army than the sword of the enemy. With the command of water, which gives the facility of ensuring personal cleanliness, and with a thorough ventilation of dry and pure air, alternately heated and cooled, as reviving the movements of action in the animal system, and preventing the aggregation and propagation of the seeds of contagious disease, the great requisite of a place fit for the reception of sick is prepared. It is known to those who look with care, and who reflect on

what they see, that ablution with pure water, well timed and judiciously employed, that refreshing the surface of the body and reviving the action of the lungs, by the successive applications of a pure atmosphere, are the points upon which the great question of recovery depends. The conveyance of water is simple and easily accomplished by ordinary means; the proper ventilation of apartments or application of pure air is also attainable with little difficulty; it is effected by a just disposition of doors and windows and right management of heat by means of fire-stoves and funnels. The air, dried, warmed and moved by these means is preserved in a state of perpetual circulation as a consequence of a change of temperature; circulating perpetually, freely and extensively, it is preserved pure, and fit for the purposes of animal life.

NOTES

OF

ILLUSTRATION, PROOF, AND APPLICATION.

CHAPTER II.

Origin of general Hospitals within the Kingdom of Great Britain—Number and Description of those now existing—Form and Manner of Equipment.

A. §. A CONSIDERABLE change, more strictly speaking an entire revolution, took place in the medical arrangements of the British army at an early period of the late war. Previous to the existence of the present army medical board, the regimental surgeon had the chance of attaining the highest rank and highest value among the medical officers attached to military service; for he was eligible to fill the office of hospital physician when such office became necessary. It is known to all persons who are acquainted with the affairs of the British army that military general hospitals did not exist in England in the year 1793; the regimental hospital was then the place of reception for military sick; consequently the regimental surgeon was regarded as the principal person of the medical class connected with the army during the continuance of peace. There were no military general

hospitals in Great Britain in the year 1793;—there were also few barracks at this time. As there were few barracks, there were fewer places erected purposely for the accommodation of regimental sick. It is plain that inconvenience could not fail to be experienced from this defect. The soldiery was billeted in scattered quarters; the sick were necessarily dispersed over a wide circumference: such mode of disposition occasioned a great deal of trouble to the surgeon, and what is worse was often a cause of the imperfect execution of the surgeon's duty. Houses suitable for hospitals were, and still are, difficult to be met with in many parts of Great Britain; the sum allowed for hire was rarely sufficient for procuring a house proper for the purpose. These are evident inconveniences: they admitted of an easy remedy; a remedy complex in its nature, embarrassing in military arrangement, profuse of public money, and inadequate to the end proposed, was applied to the case. It is commonly known, and it has been already mentioned in a preceding part of this work, that the army surgeon is, properly speaking, a person qualified to act as physician, surgeon and apothecary:—he is accustomed to do so; consequently, he is, or ought to be, competent to the performance of all the duties comprehended in the circle of medical science. He is thus sole and sovereign in his office, which is an office embracing a knowledge of the treatment of military diseases of all forms and descriptions. The army medical board, appointed officially to arrange and superintend the medical concerns of the army towards the close of the year 1793, viewing the technical division of medical duties as practised by the professors of the medical art in rich and wealthy cities, projected an imitation in this new field of labour, at-

tempting to regulate the medical business of the military force by the same technical rule which obtains in the present times in the higher circles of civil life. The duties of physician, surgeon and apothecary, being considered as distinct in nature by the newly appointed board,—hospital physicians, surgeons and apothecaries were consequently selected and commissioned for the formal treatment of diseases which had been formerly committed to the care of one person as sole actor. From the excessive number of this newly created staff, more than equal of itself to the medical care of the military force prepared for service, the regimental surgeon and his assistants might fairly be said to be presented with a holiday. Excused in this manner from labour; but proscribed from entering the boundary of general hospitals in a dignified rank,—most peremptorily proscribed from the hopes of aspiring to the physician's office, they could scarcely avoid feeling that they were degraded in their condition; for they were judged to be disqualified to exercise that art in general hospitals, which they had exercised in regimental hospitals for years, which had been the sole study and the daily profession of their lives. It is plain to common sense, if the subject be viewed in its just reasons, that the office of restoring health to the sick and lame is actually one office—very intimately connected in all its parts. But intimately connected as the art of the physician and surgeon is in its real nature, the practice, as observed, was now divided; artificial boundaries were created; the duty was complicated; the progress of its operations retarded; the just effect of its exertions was even sometimes marred by imaginary barriers opposed to the free current of the art in all its channels. The physicians, introduced into the

medical service of the army by this new regulation of the medical board, were indispensably required to be fellows or licentiates of the London College; the staff surgeons were supposed to be surgeons of the corporated class—London bred in preference of others. The regimental surgeon, who probably possessed neither of these honours, but, who had exercised his art in his regiment with diligence and success for many years, was condemned to remain in the outer circle, debarred from expectation of emolument, even diminished in respect in the eye of the military by the repressive influence of the arrangement recently adopted. The newly instituted rule was deemed a hardship, if not an injustice at the time; but, as it is not the business of this place to remark farther on the principle which led to the innovation stated, or to dilate on the bad effects of the artificial division of medical duties in military service, it is sufficient to observe that, as physicians, surgeons and apothecaries were commissioned in great numbers for the medical and surgical purposes of the British army at an early period after the appointment of the army medical board, so the erection of general hospitals, for the reception of the sick and wounded of the military body, became a necessary appendage of the new system, as furnishing a theatre upon which these newly appointed officers might find an opportunity of displaying the superiority of their talents. It was formerly customary to provide physicians and surgeons to attend armies in the field, as extra aid in relief of the contingencies which happen in actual service: the regimental surgeon was deemed equal to the execution of the ordinary medical and surgical duties in times of peace, or in permanent stations and garrisons, even in times of war. The seat of war has not been transferred

to Great Britain: such an event was not even in contemplation till lately; consequently the military force, quartered in any part of Great Britain, might be considered as force quartered in a peaceable country. As this was the case; and, it is to be hoped, will ever continue to be so, it is no undue boldness to maintain, if there be any truth in the experience of past times and any faith in what is now seen, that the regimental medical staff ought to have been deemed equal to the care of the military sick in any part of Great Britain, whether stationed in camp, in private quarters, or in barracks. No causes of sudden emergence were expected to arise in the present case, requiring the means of securing the sick and wounded from the hands of an approaching enemy. On that head no provision was necessary; had the case been otherwise, the means would have been differently placed to what they are. It is not in military rule to choose the position for the sick and wounded at the advanced posts; and such the positions of most of the general hospitals in Great Britain must be admitted to be. It is obvious that the sick soldier, wherever he may be, requires hospital accommodation; but, if the care of his health be committed to the skill and diligence of the regimental surgeon, the accommodation required is calculated according to the regimental scale, and, as such, it is placed contiguous to the position of the regiment. In that case, the aids of the medical art, whatever these may be, have the chance of being applied to the purpose in the proper time and proper circumstances. This opportunity of time and circumstance, so important in ensuring just effect, is often lost in the delays and interruptions which occur in the execution of the plan of medical arrangement which now exists. Delay and interruption occur as an effect in-

separably connected with the act of removing such persons to a remote hospital, a loss rarely compensated, if an estimate be made of results in a balance of mortality, by the superior skill of the medical officers of the large and distant establishment. It will scarcely be maintained by those who look at things as they really are, and who consider their reasons with attention, that the establishment of military general hospitals is necessary in Great Britain. General hospitals are positively superfluous as far as regards the ordinary care of the health of the army within the kingdom, or rather, instead of being simply superfluous, they are hurtful in their effects; yet five magnificent hospitals have been erected for the purposes of the army within these last ten years.

York hospital.

The first of the military general hospitals alluded to is the York hospital, erected at an early period of the late war in the neighbourhood of London. This is, or ought to be, strictly speaking, an hospital for the reception of the sick Chelsea pensioners. The circumstances of the late war on the continent, by filling Chelsea hospital with disabled or invalid soldiers, may be considered as the ostensible cause for extending the medical establishment of that institution. But, though the circumstance alluded to may be admitted to have been a fair cause for the extension of the invalid infirmary, the cause, which produced the immense existing establishment of medical officers and other persons attached to the economical duties of the hospital of a few invalid soldiers, is not so obvious. The surgeon general is himself the chief of this establishment: he is aided in his duty by a deputy, or subordinate principal medical officer (as he is styled) appointed for the daily superintendence of physicians, sur-

geons, apothecaries, mates, purveyors, clerks, stewards, matrons, nurses, cooks and the whole tribe of orderlies. The establishment is so enormous, that if the sick returns be examined and compared with the returns of the medical officers and other persons employed in the service of the sick, it is believed the latter will often be found to be the more numerous of the two. There may be reasons for this :—they are not necessary for the efficient purpose; and they are not economical for the state.

It is probable that some temporary exigencies arose in the course of the late war, which suggested the idea of building a military general hospital at Deal, as a place contiguous to the coast of Flanders and Holland. The idea was approved, the plan of an hospital was formed and executed upon a grand scale, though not according to the soundest principles of hospital architecture. The hospital structure being finished, the constitution of an establishment of medical officers was the next object of concern. This corresponded with, or rather exceeded the extent and magnificence of the building. It consisted of a military superintendant, a principal medical officer, physicians, surgeons, apothecary, purveyor or deputy, clerks, stewards, matrons, nurses, and all other necessary subordinate servants in ample proportion. It may be inferred, from what has happened since the time this hospital was built, that the position had not been well chosen for the purposes of the service; for unless, during a short time in the year 1799, as connected with an expedition to the coast of Holland, it has rarely been occupied as an hospital which had good grounds for the cause of its erection, might be expected to be occupied. The medical officers, and persons attached to the sick as attendants,

Deal hospital.

were often as numerous, even more numerous than the sick or wounded, actually borne on the list as patients. This being the case, the inutility of Deal hospital in its original intention was represented to the higher powers in the latter end of the year 1803. As it was not wanted for the reception of sick it was suggested that it might be useful as a barrack: the necessity for barrack accommodation on the coast was then urgent; Deal hospital was consequently converted to that purpose.

Plymouth
hospital.

It has been stated just now that the operation of a temporary cause gave rise to the erection of an hospital at Deal; a similar cause appears to have produced a similar effect at Plymouth. It is too well known that a contagious fever committed great ravages in the British army in the earlier periods of the late war: it raged with violence at Plymouth in the years 1794 and 1795. Different corps had rendezvoused at that place from different parts; and sickness arose among them from the operation of various causes. Want of accommodation for the sick was grievously felt: the mortality was great; and, as much of this probably arose from the want alluded to, an hospital was ordered to be erected immediately as preventive of a similar evil at a future time. The hospital at Plymouth has now been finished for some years; but it has rarely been occupied to the extent that an hospital, properly placed, might be expected to be occupied. The medical officers and hospital servants are often as numerous, generally indeed greatly more numerous than the number of the actual sick. The building is thus empty, or nearly empty; and, though its inutility, as an hospital, has been demonstrated, its usefulness, as a barrack, strongly urged, it notwithstanding still retains its place

among the number of general hospitals, and preserves its complement of medical and economical officers, as if it were in full activity of service according to the original purpose of its construction.

Portsmouth may be considered as the great port of England, the rendezvous, or naval and military centre of connexion between Great Britain and her foreign possessions; consequently it is at this port that troops ordinarily embark for foreign service, or at which they disembark on their return to their native country. It is acknowledged by every one that it is not wise to carry persons to sea who are under the influence of acute disease: it is found true in experience that the cause of many of the acute diseases is liable to extend and propagate itself in the confined atmosphere of a transport ship; hence, means of accommodation are required on shore for the reception of those who are judged to be unfit to proceed on the voyage; they are also required for those, who are in need of medical assistance at the time of their arrival from abroad. This is a permanent and an allowed cause;—and it may be supposed to be the cause which suggested the idea of erecting an hospital at Gosport.

It is known to military persons, and a few words will serve to explain it to others, that there is a general depot in Great Britain established as the express rendezvous of all soldiers whose regiments are serving in foreign parts; whether these soldiers be recruits who have not joined, or invalids who have been sent home on account of age or bodily infirmity. The depot was established originally at Chatham; and, as Chatham is remote from Portsmouth which is the great port of military embarkations

and disembarkations, Gosport hospital became useful or necessary as the advanced hospital of the army depot. The army depot is now removed to the Isle of Wight which is contiguous to Spithead and the Mother-bank. It is at Spithead and the Mother-bank that vessels destined for the transport of troops usually rendezvous: from this station they take their departure and here they drop their anchor in returning from abroad. As the Isle of Wight, or the depot in the Isle of Wight, is nearly as contiguous to the Mother-bank as Gosport; and, as all soldiers in Great Britain, whose regiments are abroad in foreign parts, are necessarily supposed to be at the army depot as at their proper home, the sick received into the depot hospital are where they ought to be. If the depot hospital be sufficient in extent (and, it is indispensable to the good of the service that it be so), Gosport hospital becomes superfluous. It is even worse than superfluous. The use which is made of it serves to embarrass the military department in the execution of its ordinary business; for all those persons who are received into it must, as soon as they are cured of their maladies, repair to the Isle of Wight before their condition can be judged; that is, before they are sent to their regiments abroad, before they are finally discharged from military service, or before they are recommended for the Chelsea pension, in the event of their being disabled from further duty by reason of age, wounds or the effects of disease.

Chatham
hospital.

The hospital for the army depot is a general hospital, destined to receive all the military sick who have no regiment or home in Great Britain. It is the only one in the kingdom founded on systematic grounds and with a permanent purpose in view. It is however the last

which was projected ; and it was not finished till late in the year 1801, consequently it was not occupied for the purpose for which it was erected. The depot was removed to the Isle of Wight in the month of June 1801 ; and, as the edifice erected at Chatham for the purpose of the depot hospital could not be occupied as intended, it still remains vacant : the establishment of medical and other officers and servants is notwithstanding formed as if it were actually filled with sick *.

The experience of former times, even the experience of the present day shews distinctly that the establishment of military general hospitals is perfectly superfluous in Great Britain—with the exception of the hospital of the army depot. This, as the only military general hospital in the kingdom, ought to be rendered ample in extent and complete in all its parts for the important purposes for which it is designed. Every other medical arrangement moves in the regimental line ; and, as has been observed above, the regimental staff, if properly constituted, is equal to the medical charge in all cases where the station is permanent and the country in a state of peace. But while this is the case as respecting the aids of the medical art, it is at the same time understood that hospital accommodation should be attached, as an appendage, to every military barrack according to a just and well-calculated proportion. It is further implied among the regulations of the service that, where regular military barracks do not exist for the accommodation of troops, the necessary accommodation for the sick part of the military should be provided at fair and equitable

Barracks
and tempo-
rary hospi-
tals.

* About to be occupied as a barrack.

terms by a requisition on the magistracy of the place where the troops happen to be quartered;—a transaction comprehended in the duty of the commanding officer, not to be left to the feeble negotiation of the surgeon at the stinted allowance of one guinea per week. It is the surgeon's duty to say what is fit for his purpose; it does not belong to his office to make a bargain. The provision of a regimental hospital is a regimental concern; the officer commanding the regiment cannot, with propriety, be divested of the charge. It is comprehended in the duty of the officer who commands a corps to adjust and superintend the concerns of the sick in hospital, no less than to adjust and arrange the manœuvres in the field. The admission therefore of a foreign control, in a regimental concern, goes to introduce a combination in government which is apt to jar and move unharmoniously in action. Such *imperium in imperio* is well no where: it is to be particularly avoided in military arrangements where it rarely fails to mar effect:—but this by the bye.—It is only necessary to observe on the present occasion that, in selecting a house for the purpose of an hospital, space and ventilation are essential requisites for the prosperous cure of disease and the speedy recovery of health: hence, it is evidently economical of life, and consequently of money to be liberal in the sum allowed for the hire of hospitals.—To adopt measures which have the chance of engendering and propagating disease by the accumulation of the sick in small and cheap apartments, if primarily a saving, is ultimately a profusion of national treasure.

Injury arising from the establish-

If the establishment of military general hospitals for the reception of military sick, stationed in Great Britain, be

supposed to be unnecessary (and, the supposition must be admitted to be proved, inasmuch as the hospitals are vacant in the midst of a large force assembled near their positions; or, they are occupied to the embarrassment of the routine of military service as happens at Gosport), the money expended in the erection of these unnecessary buildings must be allowed to be money wasted,—wasted, as not being applied to effect the accomplishment of a purpose demanded by the exigencies of public service. The exigence of service in Great Britain has not yet required, and scarcely ever can be supposed to require the helps which may be deemed peculiar to general hospitals; therefore, as no necessity commands the adoption of the measure alluded to, and, as military men know that evils in armies spring from indiscipline, and experience proves that the indiscipline of the soldier is ordinarily the offspring of the loose management which obtains in general hospitals, the existence of such establishment, instead of being a benefit, is actually an injury to an army. It is well known that the erection of the hospitals established at the different stations mentioned above, called originally for the expenditure of a large sum of money in finishing the exterior structure; the original equipment, with the annual support of the equipment, many parts of which decay and perish by the mere effect of time before they are applied to a purpose, implies a daily consuming expence. If the accounts of the contractor for hospital stores, and the sick returns of most of the military general hospitals in Britain be examined and compared with each other, it will probably be found to be true, that the sick soldier might have been lodged in one of the fashionable hôtels of the *metropolis* at a less sum than has been expended for his accommodation in

ment of general hospitals, &c.

one of the military general hospitals alluded to: the aggregate salaries of his medical attendants might also be held to be ample professional fees for the first physicians or surgeons in the kingdom, giving daily attendance to persons of the highest rank in civil life at their own homes. If the money expended in the construction and original equipment of hospitals, with the daily accruing expence arising from replacing the materials which perish with the mere effects of time, be considered as money wasted, the salaries of the medical and economical officers may be considered as worse than wasted. Man is only important in his character as his labours are productive in behalf of society to a greater amount than his individual consumption; consequently, men who are idle, or not adequately employed, are little useful: as such, they sink in their own esteem, and in the esteem of others. A military physician or a military surgeon who earns his salary with toil, has a right to be proud: he is independent, inasmuch as he is quit with the public in the faithful discharge of his duty. A military physician or a military surgeon, who receives a salary for which he performs no adequate task of labour, cannot be supposed to possess the just sentiment of pride and independence. He obtains reward with little or with no toil. It is a law of animal nature that the acquisition of gain, without honourable and laborious toil, engenders a desire which grows inordinately and terminates in rapacity. Rapacity implies a moral evil; and such evil results in a certain degree from the practice which now obtains of appointing a medical staff for hospitals which contain no sick, or which are not yet built; of which there exist now, or existed lately, several examples in Great Britain.

The motive, which prompted the establishment of military general hospitals in Great Britain, is admitted to have been a benevolent one; it cannot be proved, from what is now seen, to have been a necessary or a wise one. If the case be well considered the mind of every reasonable man must be convinced of the fact, that, with the exception of the hospital at the army depot, no general hospital is necessary or useful for the accommodation of military sick within the kingdom. If there be no necessity and no use for such establishment, there is evidently an expenditure of money without ostensible good in return. There is no proof of good; there are even grounds to believe that injury results to the character of the soldier from the growth of sloth and the infection of indiscipline which attaches peculiarly to sick establishments, withdrawn from under the inspection and control of the regimental officers. The case is important and calls for the attention of the higher powers. With the evidence which belongs to the subject, and which is so obvious that it may be seen, even by those who are not clear-sighted, it is reasonable to suppose that Government will be induced to adopt the measure recommended, viz. to abolish military general hospitals and to convert the buildings erected on that account to some more useful purpose. The present position of the army depot in the Isle of Wight renders Gosport hospital unnecessary as a port hospital. If Gosport hospital be superfluous in the case existing none of the others can be said to have a pretext for retaining even so much as the name. They are not useful in times of peace: there is even little reason to expect that they could be useful in the case of actual war in Great Britain. It is not in the option of those who defend to choose the theatre

Inutility of
general hos-
pitals in
Great Bri-
tain.

of the combat, so as to make permanent establishments subservient to contingent military uses. The field of action is uncertain,—and it might be remote, so that the established hospital would afford no relief for the wounded soldier. If it should afford no relief in the one case, it is more than probable in the other that, if ever the enemy should gain a temporary position on the British shores, the lodgement would be near the points where the principal hospitals are placed; consequently these establishments as unprotected would fall into the hands of the enemy with all their equipments.

Estimate of
equipment.

B. §. The money estimate of equipments for a military hospital calculated to contain a given number of men may be easily made. The quantity of the various articles is known, the quality defined, and the price reduced to the lowest terms by offer *au rabât*. The schedule of equipment and furniture proposed in this place, and supposed to be the most suitable equipment for hospitals, is different from the schedule of the common equipments. The different lists are subjoined. The forms now proposed are held to be better as being more portable; the quality superior as being more durable; the cost less as the quantity is more correctly measured: nothing that is useful is wanting; nothing that is superfluous is provided. If what is here exhibited as a specimen of what is fit and useful, compared with the specimen of what was actually provided for a defined service in the various expeditions which took place in the late war, be carefully examined as applicable to purposes of use and economy, the balance appears strongly in favour of what is now proposed. If every thing which is necessary or useful for the convenience of the sick be actually found in the

one schedule; many things which are unnecessary, consequently altogether superfluous, present themselves in the other; or, if necessary in kind, as measured in quantity by no just rule, are lavishly provided. In this case, the superfluous part perishes in store through the effect of time; or, remaining unexpended at the termination of the service, it may be considered as so much lost. It is plain that where there is no precise knowledge of things, there is no just measure in the supply of means; consequently there is superfluity on one hand, or defect on the other. The exhibition of schedules of hospital stores ordered for a defined service, with a comparison of what is proposed as an improvement on this head, affords a better explanation of the subject than any that can be given in general terms:—they are therefore annexed with explanatory remarks. Table, N^o II. III. IV.

Table, N^o II.

List of Hospital Stores, &c. shipped for St. Domingo in the Year 1795—calculated for a Force of 15,000 Men.

Sets of bedding.....	7,000	Candlesticks.....	250	Carving knives and forks	18	Groce corks.....	80
Hospital marq. and tents	40	Lanterns.....	120	Doz. knives and forks..	46	Ledgers.....	10
Bowls.....	9,500	Funnels.....	120	Padlocks.....	160	Folio account books....	42
Trenchers.....	9,500	Sets measures.....	46	Cwt. barley.....	84	Letter books.....	10
Platters.....	1,600	Hand lamps.....	90	Cwt. oatmeal.....	280	Steward's books.....	90
Spoons.....	4,360	45 Gallon coppers.....	19	Cwt. currants.....	25	Memorandum books....	90
Mops.....	700	40 Gallon coppers.....	19	Cwt. raisins.....	25	Reams hospital stoppages	14
Birch brooms.....	470	35 Gallon coppers.....	18	Cwt. loaf sugar.....	10	Printed discharges... 18,000	
Hand scrubbing brushes	190	Iron trivets.....	58	Lbs. ginger.....	92	Diet tables.....	6,900
Long scrubbing brushes	200	3 Gallon iron pots.....	94	Lbs. candles.....	7,000	Steward's weekly state- ments.....	1,200
Long sweeping brushes	470	Iron tea kettles.....	50	Cwt. hard soap.....	60	Lists for wages paid... 4,400	
Hand sweeping brushes	470	Flesh forks.....	46	Half firkins soft soap...	94	Lists for stores received and issued.....	1,200
Whitewashing brushes	60	Soup ladles.....	106	Gallons lamp oil.....	800	Quires royal paper.....	60
Water buckets.....	230	Pairs scales and weights	46	Gallons spermaceti oil..	120	Reams foolscap paper... 35	
Clothes pins.....	4,700	Pairs steel yards.....	46	Gallons Genoa oil.....	240	Reams post paper.....	12
Bed pans.....	234	Cocks and keys.....	120	Lbs. cotton wick.....	190	Quires blotting paper... 70	
Stool pans.....	117	Spades.....	116	Bushels salt.....	580		
Chamber pots.....	3,500	Shovels.....	116	Lbs. sperm. candles....	300		

Table, N^o III.

Schedule of Hospital Stores and Hospital Equipment, calculated for the Use of Fifty sick Men for Twelve Months; supposed to be the Amount of the Sick of a Division of Five Hundred Men, on foreign Service, in a distant Country and warm Climate.

Note.—The Calculation now acted upon for the Purposes of the British Army.

		REMARKS (by the Author).
Tents.	1 Hospital marquee, &c. 1 Round tent.	
Bedding.	100 Sets of bedding, each set consisting of 1 Palliass. 1 Bolster case. 3 Sheets..... 2 Blankets..... 1 Coverlet.	Three sheets do not afford a change for a sick bed. One blanket sufficient for a warm climate.
Dresses.	25 Flandel shirts..... 100 Flannel gowns..... 100 Flannel caps..... 100 Flannel waistcoats..... 100 Flannel trowsers..... 200 Linen shirts..... 100 Coarse linen shirts..... 50 Pairs worsted hose.....	Unnecessary, where a proportion of the shirts are cotton. Cotton preferable for a warm climate. Cotton preferable. Unnecessary. Cotton preferable. 150 Sufficient, where washing is easy and drying certain. Purpose not visible. Nuisance in a hot climate—the cotton sock useful.
Wood.	200 Bowls..... 150 Trenchers..... 20 Platters..... 300 Spoons..... 10 Mops..... 10 Birch brooms..... 4 Long scrubbing brushes 3 Hand scrubbing brushes	Wooden utensils, though cheap in first cost, are not cheap in the end: they are apt to split; the number here stated proves they are expensive. It necessarily implies waste to carry out to a distant country the common implements required in cleaning hospitals or common habitations. These always exist in civilized countries; if higher priced in the West Indies than in

Schedule of Hospital Stores, &c.—continued.

		REMARKS (by the Author).
Wood— <i>continued.</i>	3 Long sweeping brushes	England, they are notwithstanding cheaper at the point of use, when the expence of freight, &c. is deducted: in the case of purchase on the spot the means are, or may be measured correctly to the needs,—not easily done in the other case.
	3 Brushes for whitewashing	
	3 Water buckets.....	
	1 Washing tub.....	
	1 Bathing tub.....	
Pewter.	10 Bed pans.....	3 Sufficient.
	6 Stool pans.....	3 Sufficient.
	100 Chamber pots.....	55 Sufficient.
	8 Urinals.....	3 Sufficient.
	5 Basons.	
	5 Blood porringers.	
	10 Common size plates.....	55 Required.
	2 Large size plates.	
	2 Dishes.	
	1 Large ink stand.	
	4 Four quart saucepans...	2 Three quart saucepans sufficient for extra culinary purposes in an hospital of 50 men.
	4 Three quart saucepans..	
	4 Two quart saucepans...	
	25 Quart pots.....	Porringers answer the same purpose.
	75 Pint pots.....	5 Sufficient.
	15 Camp kettles.....	
	4 Candlesticks with snuffers (chained).	
	5 Lamps.	
	2 Lanterns.	
	3 Tea kettles.	
	2 Hand lamps (Miles's patent).	
Tin.	1 Water pot.	
	1 Slipper bath.....	Unnecessary, where there is a bathing tub.
	15 Spitting boxes.....	5 Sufficient.
	5 Tea pots.....	2 Sufficient.
	1 Set funnels (6).	
Iron, Brass, &c.	1 Forty-five gallon copper	Probably meant for the purposes of washing and bathing.
	1 Forty gallon copper.....	
	2 Iron trivets for coppers.	Unnecessary.
	1 Three gallon iron pot.	
	1 Iron tea kettle.	
	2 Flesh forks.	
	2 Soup ladles.	
	1 Pair scales and weight.	
	1 Pair steel yards.	

Schedule of Hospital Stores, &c.—continued.

Iron, Brass, &c.—continued.		REMARKS (by the Author).
Iron, Brass, &c.—continued.	3 Brass cocks with keys .. 1 Shovel, 2 Spades, 2 Hatchets 1 Felling ax 1 Hand saw 1 Crosscut saw 1 Small framed crosscut saw 2 Augers 2 Tap borers 3 Gimlets 1 Nails	A great part of this superfluous.
	100 Screw nails	
	1 Hammer	
	1 Copper adze	
	2 Turn screws	
	3 Padlocks, with staples...	
	3 Packing needles	
	50 Sewing needles	
	1 Large carving knife and fork	
	2 Dozen knives and forks }	
	1 Coffee roaster.	5 Dozen are required so as to give a knife and fork to every man.
	1 Coffee mill.	
	50 Iron spoons.	
	1 Set marking irons.	
	1 Set stamping irons.	
Stores.	25 Gallons lamp oil.	Unnecessary to be sent to a coffee country. Ditto to a sugar island. Unless Kensington of the best qua- lity, unfit for a hot climate. Better left to be purchased on the spot. Not useful. Better supplied from the commis- sary's store. Comprehended in the ration. Useless. Ditto.
	8 lbs. Cotton wick.	
	10 lbs. Coffee	
	5 Gallons British spirits.....	
	100 lbs. Candles	
	2 cwt. Hard soap	
	3 Half firkins soft soap	
	5 Bushels salt	
	30 lbs. Tea.	
	1 cwt. Rice	
	$\frac{1}{4}$ cwt. Currants	
	$\frac{1}{4}$ cwt. Raisins	

Schedule of Hospital Stores, &c —continued.

	REMARKS (by the Author).
Vinegar.....	Included among medicinal stores. Rice supplies the place of oatmeal and barley—the first of which soon spoils in the tropical cli- mates. Absurdly sent to a sugar colony.
Barley.....	
Oatmeal.....	
Muscovado sugar.....	
Loaf sugar.	
100 Cot bedsteads with fold- ing feet and head boards }	55 Sufficient.
5 Canvass bearers with two poles each for wounded seamen.	
5 Framed biers for wounded men.	
5 lbs. Small cord.	
1 Filtering stone.	
5 lbs. Thread.....	Found in the country when wanted.
1 lb. Twine.....	
12 Yards Osnaburgh.....	
60 Yards flannel.....	10 Yards sufficient.
1 Baggage water deck.	
2 Fumigating lamps.	
5 Yards diaper.	
$\frac{1}{2}$ Piece hessens.	
1 Hand cart.	
1 Ledger.....	
2 Folio account books....	
1 Letter book.....	
2 Steward's books.....	
2 Memorandum books ...	
1 Ream of stoppages.....	
500 Printed discharges.....	
20 Monthly returns of pur- veyors stores.....	The account of stationary is so enormous that it must either be wasted, or, if applied to use, it must turn the hospital into a bureau for clerks, instead of a field for medical men adminis- tering
20 Do. of apothecaries stores	
4 Orderly books $\frac{1}{2}$ inch thick.....	
4 Daily registers.....	
2 Weekly state books....	
10 Quires weekly states....	
200 Diet tables.....	
400 Regimental weekly states	
100 Regimental monthly states	
500 Admission tickets.....	
4 Quires royal paper.....	
3 Reams foolscap paper...	

Schedule of Hospital Stores, &c.—continued.

Stationary—continued.

3	Reams post paper.....
2	Quires blotting paper...
6	Papers blacking powder..
3	Reams wrapping paper..
4	Papers red ink powder..
4	Pen knives
1	Erasing knife
400	Quills
200	Pens
10	Pencils
1	lb. Sealing wax
1	lb. Wafers
1	Ounce pounce
1	Round ruler $2\frac{1}{2}$ feet
1	Round ruler $1\frac{1}{2}$ foot....
1	Ream hospital stoppages, in books.....
200	Vouchers for accounts..
100	Lists for wages paid
100	Sheets, same as steward's books.....
20	Nurse's regulations.....
20	Ward-master's orders...
20	Patient's orders.....
300	G. H. P. medical officers weekly returns.....
20	G. H. P. monthly returns
1	Medical register book (four quires)
1	Book of monthly returns of purveyor's stores..
1	Ream copy paper.....
400	Fortnight's incidents ...
2	Steward's books (marble paper)
4	Books, diet tables (three quires each).....

REMARKS (by the Author).

tering to the sick. It cannot be pretended by any one, that there is a proportion in this case between what can possibly be wanted, and what is actually provided.

Note.—This schedule of purveyor's stores, stated to be the authorized calculation of stores for an hospital of fifty sick, must be considered to be enormous in quantity in the whole, deficient at the same time of several articles conducive to the comfort, even necessary for the essential purposes of the sick. The amount of the expence stands about 875*l.*: and, it is added, that the quantity here specified is intended to be renewed in twelve

months. As there are some of the articles which may last for ten years, and many of them which will last three years or upwards, it is plain that an immense quantity of superfluous things will be accumulated in a short time in the hospital magazines, a circumstance which is productive of many evils, viz. expences of store-room and of store-keepers, incumbrance and expence of transport in the event of changing place, with waste or actual loss not easily measured. It may be fairly said that the calculation now exhibited has not been made by persons who knew things in the scene of service, or who witnessed from their own experience what are the useful or superfluous parts of hospital furniture and equipments.

Table, N^o IV.

Schedule of Equipment of personal Necessaries, Furniture and Utensils, for an Hospital of Fifty Sick or Wounded—viz. a just Proportion of original Equipment, a Calculation of Duration of the different Articles supposed to be in constant Use, with Notice of the Variation required in Clothing and Bedding as adapted to an European or tropical Climate.

<i>Kind and Quality of Articles.</i>	<i>Number of Articles.</i>	<i>Duration, or Period of Renewal.</i>
Bedsteads made, in the manner of a cot frame, of well-seasoned wood, carefully and well painted, supported by pillars fixed securely in the frame, a continuation of which forms stretchers for a head and foot cloth—the bottom part of sacking laced underneath—two sets of sacking—the model to be seen at Messrs. Trotters, Soho Square, London.—The number of the sick is 50, the number of bedsteads, in provision of accident.....	55	
Sacking.....	110.....	Renewed in 3 years
Bolster cases, linen or cotton...	110.....	ditto
Pillows, hair (tick).....	110.....	10 or upwards
Pillow cases linen (fine).....	110.....	3 years
Blankets.....	110.....	4 ditto
Pairs of sheets, linen (half bleached).....	110.....	3 ditto
Pairs of sheets, cotton (fine)....	50.....	3 ditto
Coverlets, twilled calico, dyed chocolate or sky-blue.....	110.....	6 ditto
N. B. In European climates, the bed is furnished with two blankets and a palliass for straw.		
Hair matrasses for particular cases.....	5.....	6 ditto

Schedule of Equipment of personal Necessaries, &c.—continued.

<i>Kind and Quality of Articles.</i>	<i>Number of Articles.</i>	<i>Duration, or Period of Renewal.</i>
Tables between the beds with night cupboards	30.....	Renewed in 10 years or upwards
Napkins for ditto	60.....	4 years
Chamber pots (pewter).....	50.....	10 ditto
Spitting pots.....	5.....	ditto
Urinals (pewter).....	3.....	ditto
Bed pans (ditto)	3.....	ditto
Stool pans (ditto).....	3.....	ditto
Gowns in form of dressing gowns, striped calico	110.....	18 months
Trowsers, striped calico	110.....	1 year
N. B. In European climates, riding coat, waistcoat and trowsers of grey duffel.		
Shirts, linen, 100—cotton 50...	150.....	18 months
Handkerchiefs, linen.....	110.....	1 year
Slippers, leather or listing, for the sick, and those in early stages of recovery	50.....	1 year
Night caps, cotton.....	110.....	18 months
Pint porringers, block tin.....	55.....	2 years
Porous or sweating jars for drink, with cock and key—different sizes	10.....	10 ditto
Two-quart tea-pots, double block tin	2.....	2 ditto
Iron tea-kettles (two gallons)...	2.....	3 ditto
Cups and saucers (queen's ware)	30.....	uncertain
Knives and forks.....	5 dozen	4 years
Large carving knife and fork...	1.....	ditto
Large wooden bowls.....	3.....	2 ditto
Trays	3.....	10 ditto
Table cloths	12.....	6 ditto
Camp kettles	5.....	2 ditto
Iron pot (12 gallons).....	1.....	10 ditto
Copper (40 gallons) for heating water.....	1.....	ditto
Bathing tub, with cover and padlock, thereby serving as a box for the transport of various articles in the act of moving	1.....	4 years

Schedule of Equipment of personal Necessaries, &c.—continued.

<i>Kind and Quality of Articles.</i>	<i>Number of Articles.</i>	<i>Duration, or Period of Renewal.</i>
Basons, large.....	3.....	Renewed in 4 years
Large sponges for washing body	5.....	 2 ditto
Large towels, linen or hucka- back.....	12.....	 1 ditto
Flannel towels for rubbing dry ..	6.....	 2 ditto
Sets of combs (ivory and horn)	6.....	 1 ditto
Razors.....	6.....	 2 ditto
Blood porringers.....	5.....	
Copper buckets—tin inside, ja- panned outside.....	3.....	 6 ditto
N. B. The common imple- ments for house cleaning may be provided on the spot—at an ex- pence probably not exceeding 5 <i>l.</i> per annum.		
Printed admission cards accord- ing to the form annexed.	500.....	 1 ditto
Morning states ditto.....	500	
Weekly states ditto.....	200	
Monthly returns of sick ditto...	60	
Monthly returns of stores ditto..	40	
Paper { Foolscap.....	10 quires	
Post.....	10 quires	
Blotting.....	1 quire	
Ink powder (black).....	4 papers	
Ink powder (red).....	1 ditto	
Quills.....	100	
Sealing-wax.....	$\frac{1}{2}$ lb.	
Wafers.....	$\frac{1}{4}$ lb.	
Round ruler.....	1	

Note.—The amount of the cost of the above articles of equipment, estimated by the Government contractor, does not exceed the sum of 550*l.* sterling;—to maintain the equipment in perfect repair for the space of ten years will not, it is presumed, require more than 1000*l.* at the most, provided there be a careful attention to economy in all cases. The original cost of the ordinary equipment of an hospital containing fifty patients,

furnished in all things according to the schedule exhibited N^o III. and now acted upon for the purposes of the British army, amounts to 875*l*. If this equipment be renewed every year, as appears to be implied in the title of the schedule, the sum of the expence amounts at the expiration of ten years to no less than 8750*l*. sterling. It is plain to every man who has experience of the common business of life, that the greater number of the articles do not require to be renewed annually. If actually supplied, though they be not worn out, the expence is the same to Government, even greater than if they were actually consumed, for store-room is required to receive them and store-keepers to take care of them: they also accumulate beyond the consumption in such manner as to prove a serious incumbrance to an army in the event of moving.

If the condition of the sick in hospitals, equipped after the common manner and in hospitals equipped after the manner now proposed, be compared together, the difference cannot fail to strike forcibly. It is believed that there are few military officers, in the regiments of the line, who would think their condition hard to be no otherwise accommodated in time of sickness, than the soldier is supposed to be accommodated in the case proposed. If the equipment should be deemed too fine in its kind for the rude life of a soldier, it should be held in view in consideration of the case, that change of circumstances tends, simply as change, to relieve pain—contributing materially to the speedy recovery of health. Tender care in the time of sickness, independently of the humanity due to those in affliction, is thereby economical of life and money—in consequence of its medical effect. If this object can be accomplished at less expence than is now allotted to the purpose, the advantage is so obvious that the measure cannot be supposed to be rejected on any justifiable grounds. That it can be so accomplished is proved by a reference to an estimate of the two schedules annexed. This may seem to be a paradox; but the mystery is solved by observing rule in measuring means to the ends in one case, and neglecting it in the other. The expence of the original equipment for an hospital of fifty sick is 550*l*. in the case proposed; the amount of the repair for a space of ten years, estimated at the highest, does not exceed 1000*l*.;—in all 1550*l*.: the expence of the original equipment in the case existing amounts to 875*l*.;

the repair, or rather the annual renewal in a space of ten years amounts to 8750*l*. In an army consisting of one hundred thousand men, in which there may be supposed to be ten thousand sick, the cost of the original equipment, according to what is proposed, amounts to 110,000*l*.; the repair for the space of ten years to 200,000*l*.;—in all to 310,000*l*.: the cost of the original equipment in the case existing, amounts to 175,000*l*.; the amount of the repair, or rather the annual renewal during a space of ten years amounts to 1,750,000*l*. sterling.—This is only a gross estimate, serving to give a general view of the subject: if not precisely correct it furnishes grounds on which to found opinion that the two cases are prodigiously different.

CHAPTER III.

Medical Management of Sick in Hospitals considered in Detail—Classification—Returns—Medical Officers—Nurses—Supply of Medicines, &c.

THE first object, in the medical arrangement of hospitals, relates to the rule of classing the sick according to the form and character of their diseases. Classifica-
tion of sick. This object, though important in itself, though the hinge upon which order in medical establishments radically depends, does not appear to be sufficiently appreciated in the present time; at least it is not known to the author that it is practised systematically any where in Europe, either in civil or in military infirmaries. As the mode of arrangement alluded to in this place is not adopted generally, it may be presumed that the nature of the subject is not generally understood. On this presumption, the author thinks it necessary (others may think it superfluous) to detail at length the manner of conducting the process in all its parts, so as to demonstrate to the conviction of every man's understanding the benefits, which are likely to accrue to the medical art from adopting a practice which may be considered to be as yet new, and, as such, not perfectly known.

The mode of classification here suggested may be deemed fanciful and embarrassing. If so in the opinion of those who have not seen it tried, or who are slow in reading the characters which discriminate the various classes of disease, it implies no difficulty of execution with those who possess ordinary powers of discernment, or who are active in disposition so as to make the proper use of their knowledge.—The division of hospital accommodation requires some forethought: attention in the act of observing the casual or periodical changes which take place in the progress of maladies of the same or various natures is likewise indispensable; for, unless the various changes be observed and attended to with the utmost care, the arrangement cannot be preserved consistent and exact throughout either in form or reality.

Characters
of disease.

Disease, particularly acute disease, may be defined in two words to be a new or unnatural movement in the actions of the animal system. Such movement, arising from various causes acting upon parts of various structure, has many shades of difference. It is a radical law of animal nature that movement or action of every denomination terminate in product or effect; and, as movement or action is variously figured by the combined operation of a multitude of causes, so necessarily is the effect produced. In many of those deranged or newly modified actions termed

disease, the natural products or secretions of the animal system are increased or diminished in quantity;—the basis of the product is not always changed in quality as a consequence of the disturbed movement. The death of the animal follows in this case as the result of excess oppressing important organs with superfluity; or of defect defrauding the parts of the due quantity of stimulation necessary to the just exercise of their functions. The vital action is thus overwhelmed or suspended; but no material of a new or foreign nature is generated in the course of the fatal process. This is the more natural and the more simple case: in others, the product of the new movement, while increased or diminished in quantity, is also peculiarly manufactured. It assumes a new property in consequence of the new or adventitious mode of action impressed upon the manufacturing organ; and, being thus peculiarly modified in its qualities, it manifests a new character, acting in its turn as a creative cause which perpetuates successively a series of animal motions, so figured in their nature as to produce effects or products similar to the original cause which gave them birth,—peculiar and capable of extension or propagation by similar means through a multitude of channels, or long succession of living subjects. This constitutes the character of contagion; and it may be remarked in this place, that the diseases which possess this contagious

character, besides the common danger belonging to excess or defect as appendages of diseased movement, are dangerous on other grounds, disseminating their multiplying influence, by a peculiar property, to the surrounding circle ; the extent of the sphere and the consequent diffusion of the action bearing a proportion to the susceptibility of subject, the activity and peculiar conditions of the propagating material. The danger to the community is manifest in such case ; and on this account, prudence enjoins most peremptorily that persons afflicted with maladies of this description be separated from the mass in the first instance, carefully secluded, and religiously guarded in the after-progress with a view of assuring the common safety from danger. The diseases, which possess this propagating or contagious feature, are various in form and character. Some propagate by contact only ; others infect a wide circle of the atmosphere, move with activity and spread rapidly over an extensive district by an expansive contamination of the air : they do so according to rule, but the rule is not as yet rightly understood. The action of one class of contagious diseases is accompanied with fever and rapid commotions of the vascular system ;—the sphere of such usually extends wide : the action of others exists without fever ; these, for the most part, propagate only by contact. The greater number, if not the whole of the contagious febrile diseases, are characterized

by cutaneous eruptions, or secretions peculiarly modified. This is obvious, distinct and specific in some, particularly in the exanthematous or eruptive class; it is obscure, and not definable in others, such as the jail or hospital fever. The jail or hospital fever is admitted to be eminently contagious: the cutaneous system is peculiarly affected; but the characters are frequently so masked, the lines so delicate, that, if the penetrating eye be capable of discerning the traces on actual inspection, the art of expressing them, so as to render them intelligible in description, is scarcely attainable. The disease unquestionably possesses peculiarities in the figure of its action, but the external signs are obscure: the origin of its cause is usually known as being artificial; it is liable to be produced or generated in peculiar conditions of air corrupted by a mass of languishing or sickly people accumulated within narrow limits; it multiplies itself by its own operation, communicates its seeds or products to neutral substances;—and, by means of these, it is capable of being transported to distant places in various degrees of activity or preservation.

It is assumed as a primary rule in hospital arrangement, that the principal forms of contagious diseases, as distinguishable by their peculiar signs, be separated from each other and classed in wards or sick apartments according to the predominant

Discrimination of classes.

features of their several characters. It is not to be expected as things are in mixed society, where means are often deficient, that separate apartments are prepared in hospitals for every varying form of disease to which the community is liable. As this provision, however desirable, cannot always be attained, it consequently becomes necessary, in many cases of exigence, to admit diseases of different class and character into the same apartment. It is known to common observers, that new combinations of morbid movement sometimes arise in animal bodies from mixture of external things of contrary nature : hence, it is no more than prudent, wherever the necessity of mixing occurs, previously to investigate the nature of the ingredients, with a view that, if conveniences and facilities do not follow the mode of arrangement adopted, no danger of generating and propagating evil may result to individuals from the effect of measures which are commanded by necessity. Certain contagious forms of malady, eruptive, but not febrile, such, for instance, as various forms and conditions of itch, are placed apart from other diseases according to the rules of common medical arrangement. As maladies of this class rarely imply immediate danger to the life of the subject, they rarely attract the notice of hospital establishments in civil society, where hospitals are supposed to be constructed and equipped for the reception of such diseases only as

are difficult in cure or dangerous in nature. Such maladies, though not dangerous to life, render soldiers ineffective for their duties, or nuisances among their comrades: on that account they solicit notice in the medical arrangements of armies, so as to obtain a particular provision for themselves. The disposition of these comprehends no mystery; it is plain and obvious; the nature of others is more obscure, the effects more important, implying more difficulty of discernment and requiring more strict care in separation. The principal eruptive diseases accompanied with fever, viz. small-pox, measles, &c. are specific in their forms and leave no ambiguity in the rule which regulates this part of their treatment. The various modifications of the erysipela-tous class, as scarlet fever and particular kinds of ophthalmia, though less precise in appearance, still possess peculiar characters and propagate their kind after a peculiar rule. As such forms of disease do not arise from the operation of common endemic causes, they are not regular in their periods of occurrence. They are specifically contagious; but they are also epidemic at particular times. When they do occur, in whatever manner they may have arisen, they call for instant separation and strict seclusion on account of the safety of others. Classification of diseases, according to character, and correct seclusion of such as are infectious, are commanded, in the case under view,

as a measure of safety ; classification, according to condition, is convenient on other occasions as a means of economy. The rule recommended in this place, for classing the various forms of fever in apartments according to radical distinctions of character, viz. the periodic, whether intermitting or remitting in one apartment, the continued endemic with or without local affection in another, is of obvious utility. If no cause exists for the adoption of the measure on account of the dangers of infection, the execution of duty is at least facilitated by the arrangement ; for regimen and medical treatment have necessarily a strong feature of correspondence in diseases which are radically of the same class.

It must be borne in mind uniformly, as explanatory of the principle which directs medical arrangement in hospitals, that there is one form of continued fever arising from the operation of common causes, usually denominated endemic, either simple or distinguished by prominent local affections which runs its course without multiplying its cause. Its operations which are marked by simple excess or defect, general or local, appear to cease or terminate in the first circle. They produce no new forms of productive creation ; that is, produce no material, as an effect of the actual derangement in the animal process, which propagates its kind or communicates its qualities

to other healthy subjects. This form of fever is termed endemic as a product of the action of natural causes ; and, as such occurring frequently and unavoidably, the speedy extinction of the human race would scarcely fail to be the consequence of its operations, if it possessed the power of multiplying its cause as an effect of the febrile process. But such forms are unproductive radically ; and such fact marks the justice and mercy of the Creator of the universe, who, in his system of infinite wisdom, permits not the operation of a propagating effect to spread destruction where the action of causes is purely natural,—and, as such, less avoidable. This form of disease, arising from the action of natural causes in their pure forms, is frequent and prominent among fevers ; but it is not the sole form of febrile malady. There occurs another, arising apparently from the operation of artificial causes, contagious in its nature and productive of its kind. The cause of this is obviously artificial in some cases ; perhaps it would be found to be so in all, if there existed knowledge sufficient to discern rightly the secret movements of animal structure ; or if the minute and obscure conditions which infect the constitution of the common air were visible. The source is generated in crowded and ill ventilated apartments. When generated in this or in any other manner, the new movement, the consequence of its action, manufactures a cause of an expansive quality, which

infecting the atmosphere to a certain distance around, multiplies itself through a series of subjects with more or less rapidity according to a multitude of modifying circumstances. The product of this disease is so constituted, as to attach itself to things within a certain sphere of distance, to infect these susceptible substances with its qualities, to communicate the essence of its qualities to a certain circle of the atmosphere; and thereby to excite an infected action in the living subject, in a district or country remote from the original source. The power of action of this cause is apparently varied in proportion as it is concentrated or diffused; and, in this manner, the morbid actions are frequently more violent, as originating from a cause deposited upon intermediate dead substances, than as emanating immediately from the living body. The sphere of action of this contagious cause is not extensive; but its force is frequently destructive. Wherever a disease possessing such character exists, the public safety demands imperiously that it be separated and kept apart from others. If its power be so active, and its effects so baneful as they appear to be in hospital histories, it is important to ascertain the marks of its existence that its dangers may be averted as speedily as possible. Such knowledge is desirable, but it is not easily attained. The character of the disease, as observed above, is not written very legibly in the external signs;

and, the human mind, weakened by fears and blinded by prejudices, is not proof against deception in the history of its effects. It sometimes assumes the mask of dysentery or diarrhœa; sometimes it appears under the form of pneumonia; it even manifests itself in scabby eruptions resembling leprosy; and it frequently commits ravages as an ulcerating process, or peculiar form of sore leg. These appearances are obviously different in aspect; yet the cause which produces them is ultimately one, and intimately connected with the contagion which brings forth, at other times and under other circumstances, a diseased movement of distinct febrile form. The artificial disease here alluded to, which is apparently the product of errors in the economical arrangements of artificial society, propagates itself by contact or near approach in whatever shape it may exist. It communicates its seeds to certain neutral substances which are brought into contact with it; and, conveyed to distant places by such means as have been just now mentioned, it manifests its action anew in a scene remote from the source where it originally arose.

The forms, here noticed, are the principal forms of those acute diseases which become the subject of arrangement in hospitals, civil or military. If the hospital establishment be so constituted as to supply the requisite means of accom-

modation for all classes, the periodic diseases are supposed to be placed in one ward, the continued endemic in another, the continued contagious, whatever form it may assume, most indispensably in a third—secluded carefully from communication with others. As the cause is artificial—the manufacture of mistaken or defective arrangements in economy, the appearance of the disease is bound exclusively to no stated time or season of the year; it is however most frequent in the latter end of autumn and beginning of winter, as a suite of the autumnal bilious fever. This is the case at least in armies in late campaigns, where the air is cold and damp; its diffusive power weakened or stagnant; the tents or quarters overcrowded: hence arises the propriety of watching the course of the slow autumnal bilious fever with a careful eye; for it is here that mischief is apt to insinuate itself unseen, the transition to the contagious process being more readily effected in this instance than in other forms of febrile malady,—whether depending on accidental conditions of the atmosphere or other secret causes, the author does not pretend to determine.—Besides the division of apartments here specified, as calculated for the accommodation of the more common and greater mass of acute diseases, one or two small wards are allotted for the reception of measles, small-pox, scarlet fever, or others of the erysipelatous character. Where such maladies become epidemic,

the diseased subjects being numerous, temporary arrangements are necessarily to be adjusted suitable to the exigence.

The above being the outline of the projected mode of classing sick in hospitals; it is implied in the supposition of the rule being duly acted upon, that the nature of every malady be examined carefully, the circumstances discriminated accurately in the receiving-room previous to admission into the sick wards; with the view that the nature of the various cases being correctly known, the arrangement may appear to be, and be, in fact, methodical and just in all its parts. The upper floor of hospitals, which consist of two stories, is upon the whole the best adapted for the reception of acute diseases in their first and most acute periods. It is less exposed to the noise and bustle of persons passing to and fro in the execution of the ordinary business of the hospital than the lower division: seclusion is also more easily maintained as a consequence of position; hence the chances of infection are diminished—in the event of contagion existing in the character of the disease. It is demonstrative to the conviction of the most prejudiced mind, that a judicious classification of diseases according to character is a matter of the first importance in medical hospitals; it is even of great value in hospitals occupied by surgical patients—and for very obvious

Detail of
rules of
classification.

reasons. The well-adjusted arrangement facilitates labour in all its stages; it serves moreover to invigorate effect. Space and ventilation are the grand properties of sick apartments,—conducive to fortunate issue in almost all cases of disease; they are particularly necessary for those wards which are set apart for the reception of wounded. Where the air is contaminated, the corruptive process soon commences in the wounded limb: mortality, in such cases, is great. Where the legs ulcerate spontaneously, or where common sores degenerate into spreading ulcers, there exists evidence of an infected atmosphere. Subjects so circumstanced ought therefore to be separated from others, spread out as widely, and guarded as scrupulously from communication with others as those who suffer from the open action of a contagious fever.

Detail of
classifica-
tion follow-
ing change
of con-
dition.

The sick are supposed to be classed in wards or sick apartments at their introduction into hospitals, according to the forms and characters of their diseases. Acute diseases differ in radical character; and, while they differ in radical character, they also undergo some variety of appearance and some change of real condition in the course of their progress. As the appearances and conditions are different in different stages; and, as the difference of condition influences medical treatment, it is convenient, and it will be found

to be useful in trial to maintain such arrangement in detail, that a correspondence of circumstances may be preserved among the patients throughout the whole hospital process. The suggestion is true in its reasons; the experiment gives proof that it facilitates the execution of business in practice. It is thus customary to consider persons accommodated in hospitals under treatment for the cure of acute diseases as standing in three different conditions, viz. 1. The commencement or early stage, that is, the actual acute condition—the malady still progressive. 2. A stage of progress towards recovery—the force of the disease abated, the diseased movement actually arrested—the healthy functions yet weak, as not confirmed in their course by due trials:—this is the first stage of convalescence. 3. A period of more perfect convalescence, strictly speaking a probationary state of health. In this case no diseased movement is supposed to remain in the habit: the functions of health are restored; but it is judged to be a measure of general prudence that subjects of recent acute disease be detained in hospital under the eye of the physician, submitting to rules of exact regimen till such time as decisive evidence arises that health is confirmed, strength regained, and the customary periods of relapse passed over. The conditions here described are different in appearance and in reality; the mode of medical treatment and rule of economy

differ in these different conditions. Hence, as medical treatment and economical discipline intrinsically differ in the circumstances described, a classification of the subjects according to their circumstances tends to simplify the execution of the duties, both medically and economically.

In the first or acute stage of febrile disease there is rarely any desire for food; consequently the patient is placed on the list of low diet. It is wasteful to provide and prepare food in such quantity that it cannot be consumed; it is even hurtful to press the sick to eat where nature revolts against it. The disease is now supposed to be in the vigour of its course; and, in such case, it is only from active medical treatment that its progress can reasonably be supposed to be arrested. Where the diseased movements are active, the order of the natural functions is disturbed, the force impaired, the expression obscured; inso-much, that the exertions of the natural powers being weak and feeble, the assiduous and careful attention of the nurse becomes necessary or indispensable to support the feeble body in the performance of its common offices. As the character of the disease is fundamentally one in the case supposed; and, as all the movements of similar diseases correspond generally, though they may be modified individually by the varying condition of the subject or different progress of the malady,

so the mode of treatment and rule of regimen necessarily correspond in the outline—they vary occasionally in the detail. 2. In the second stage, where the disease has ceased, whether broken by treatment or permitted to attain its own period of termination, the natural functions resume their course; a desire for food returns, with a desire and generally with the ability of changing place, that is, of rising from bed and walking about in the open air. Such persons as have advanced to this stage of recovery are placed upon the list of half diet. The disease has ceased; but the recovery is not completed; the condition of the patient consequently demands care and calls for the attentions of a correct discipline. When the point described is attained, the patient is completely washed with warm and cold water alternately, purified correctly in every part, furnished with fresh clothing and carried into another apartment. A face of uniformity in appearance and a corresponding measure of physical wants in reality are adjusted and maintained by this means through the whole circle of the ward. This is something in the great work in view:—labour is, at least, curtailed and money husbanded as a consequence of the arrangement adopted. 3. The recovering man advances in his course, making a regular progress towards confirmed health. He regains the power of assuming bodily exercise; and he craves an increased measure of food. At this

point he is again bathed and purified personally in all his parts, furnished with a change of apparel suitable to his condition, moved into another apartment, and enrolled in the table of full diet. It results from hence, as an effect of the arrangement described, that all the wards possess uniformity of appearance, inasmuch as they are occupied by persons in similar diseases or similar conditions of recovery : hence duty is simplified and labour economized, as the result of a classification regulated by the condition of the physical wants.

The course which has been just now described is the plain and fortunate course ; but it is not the sole course of disease. Conditions arise occasionally in the progress of maladies of various description, which threaten life with danger and call for new rules of arrangement in the disposition of the sick. The aspect of disease, threatening death, is frequently ghastly—liable to make impression upon the sensibility of the spectator, and calculated to operate unfavourably upon the feeble-minded. As it is unseemly that any one be exposed to view in a public ward while suffering from the agonies of pain ; so it is hurtful, or it may be supposed to be hurtful by impression that any one be seen to die where many are sick and alarmed for their own safety. Hence, as it is charitable to the feelings in the first instance, it is

useful in the second, as contributing to the main purpose in ultimate effect, to remove such objects in due time to private apartments. They are offensive to the sight, and as such are likely to occasion uneasiness in the minds of the other patients. The appearance and the effect connected with appearance are something in this case; but they are not the whole. As those persons who are weak and extremely ill demand some peculiar means of care on their own account, it is a duty of humanity, and even of economy that they obtain it. If weak, they require the constant attention of nurses; if irritable and alarmed, they do not bear, without pain, the effect of the bustle and movement which unavoidably take place in a common ward: hence small wards, provided with careful nurses and furnished with every proper convenience for the comfort of the sick, are set apart for the accommodation of such subjects as fall into the helpless and dangerous circumstances described. By this provision, the uniformity of condition is preserved correctly in the wards set apart for the reception of acute diseases during the earlier stage. When the disease advances progressively and moves on prosperously, the patient arrives at the stage of convalescence in a given time. As convalescent, he leaves the circle of the sick and advances forward in recovery with different degrees of progress. When he stagnates in his course, or when he retrogrades, he is withdrawn

from the progressive circle, disposed in a separate apartment and suffered to repose in quiet. When relapse occurs in the advanced periods of recovery, the subject suffering relapse is removed, without loss of time, to one of the wards allotted for the accommodation of diseases in the acute stage, or to such other ward as better suits with the temporary circumstances of his case.

Value of
arrange-
ment in
forwarding
the medical
effect.

If the above principle of classification be acted upon in all the parts of hospital arrangement, a face of uniformity is created and maintained throughout in all conditions. Uniformity is ordinarily characterized as the exterior of system and order : it is more in this case ; it comprises uniformity of condition, and as such it implies a reality. This forms a system of stability, as placing things in the order in which they ought to be placed according to their internal existing relations. The execution of the arrangement proposed is practicable ; even easy in practice : the advantages are obvious and important ; the inconveniences small and inconsiderable. The medical officer gains immensely by adhering to a rule of correct arrangement in his hospital labours ; toil is shortened and effect is better ensured. When all persons in the same ward suffer under diseases of the same character, though differing in the periods of their progress, the mind of the physician is not interrupted in its train of thinking by the occurrence of things

which are foreign to the object of research. On the contrary, the train of thought moves on regularly, receiving new accessions of light at every step of its progress: these, rendered luminous by condensation, serve in many instances to elucidate obscure and difficult points of morbid history or medical treatment. The physician, who labours in a medical field so arranged, improves in knowledge rapidly and executes his work with ease. It may be fairly admitted, that he is capable of prescribing with greater facility, and with better effect for one hundred patients brought together after the manner stated, than for the sixth part of the number thrown together fortuitously—without order, or without the observance of design in the rule of classification. In the one case, the physician improves with every step which he makes; his views are enlarged, his informations condensed and formed into system, as a consequence of the routine in which his duty is presented to him. He is insensibly engaged to be zealous; for he perceives that he acquires knowledge, and the acquisition of knowledge, like the acquisition of other things, solicits a desire of more. In the other case, the ideas are scattered, the train of thinking broken by interruption. The work may be considered as a drudgery in most instances, and it may be fairly admitted that more than common zeal, and more than common constancy of mind mark the character of the phy-

sician, who is capable of executing labours, so injudiciously disposed and loosely connected, with interest and animation, even without incurring the reproach of indifference. Where the views are broken and divided by interruptions in the manner described, the impressions are weak and fruitless, as not permitted to converge to the useful point; where order and method exist, the view, properly directed by a just disposition of things, centres in the true channel of science: duty is thus executed with facility, and knowledge is acquired with pleasure. As a facility of prescribing is undeniably attained by following the course now recommended; so the actual administering of the remedy is ensured with little labour and great correctness of effect, as a consequence of the simple arrangement now described. It is stated above, that diseases of a similar nature are classed together in the same ward; it is known that remedies required for the cure of such diseases are of a similar kind. As the diseases are of a similar kind, the times most suitable for administering the remedies frequently correspond in different cases. Hence it is plain, that a dispenser of medicines is enabled to do more work in one hour by the help of this methodical arrangement, than he would be capable of accomplishing in three, where the rule of classing the sick by the character of their diseases is not observed. If he does more work in shorter time in one case than in the other, he also has the

chance of doing it more correctly ; for his course is not interrupted by the fluctuating presentation of things of an opposite nature. Persons with broken legs for instance and contagious fevers are not found in the same apartment in the case supposed ;—the actual occurrence of this appearance is not uncommon in the case existing.

The benefits of classing the sick in the manner described are obvious ; the advantages, either as regarding economy of labour or correctness of effect, are great and decided. The business is here simplified—digested in order, not merely according to forms of external appearance, but according to reality of condition. All persons in the same ward are under the influence of a similar disease : they stand as nearly as possible in the same condition of malady ; consequently, they neither multiply dangers by diffusing the seeds of new evils, nor are they inconvenient to one another, by obtruding on the common eye a view of things which do not belong, or which did not recently belong to themselves. The circumstances being similar, the progress of cure is in some degree uniform, the form of duty submitting to a common routine with convenience to the physician, and without prejudice to the patient. The point of recovery is fixed strongly in the eye of every sick person ; it is the prominent object in the thought ; it belongs to a judicious arrange-

ment to present it pleasingly and impressively, so as to act upon the mind with beneficial effect. In the first circle of sick apartments occupied by persons in the earlier stages of acute disease, one of the number, gaining a given point of recovery, is observed to disappear; the others, animated by the example of what they see, move forward with confidence and firm expectations of a similar good fortune. The view of the sick man is uniformly directed towards the point of recovery. When he attains it, he is removed to a new apartment. The transition to a new atmosphere, the refreshment which arises from a complete change of apparel, the animating impression of new and cheerful objects, all combine in action in the present case: they may reasonably be considered as causes of no small power in confirming the advantages already gained by time or the effects of treatment. —Such is the rule of movement in the first circle of hospital wards: the example of the forward movement is salutary; the advantages obvious and real: the retrograde is contrary—the impression reasonably supposed to be adverse. It certainly is not favourable: it is not even indifferent in all cases; it is however less sensibly felt in trial by the subject himself, than those, who argue in their closet with all their fears and sensibilities about them, are apt to imagine. It is well known; for it has often been witnessed by the author in the course of his experience, that those,

who merely suffer a relapse of fever, return—not cheerfully it is true, but yet without despondence, to the ward which they had formerly occupied: they are in some degree acquainted with it; and they know that no dispiriting objects are found in it, calculated to appal their courage by presenting a picture of distress. Such is the case with those, who, in the act of this retrograde movement, are in possession of themselves, capable of using their observation and their reason. Those, on the contrary, who are extremely weak or extremely ill at the time they are withdrawn from the progressive circle, appear, for the most part, to be too much engrossed with their sufferings, or too much impaired in their intellects to attend to the reasons of external things. It is admitted that the removal of a patient, from a common ward to a smaller apartment destined for the reception of dangerous cases of disease, does not fail to give an indication to others that the life of that individual person is in danger;—to the individual himself it is seldom seen to give concern, his sensibilities are absorbed, or engaged otherwise than in investigating the reasons of the measures which are adopted with regard to him.

The manner of classing sick persons in apartments, according to the characters of disease, is supposed to be generally understood from what is said above. But, as the subject is important, and,

Detail of
progress by
steps.

as the manner of conducting the process may not perhaps be perfectly comprehended by every one from the general notice as yet given, it is believed that it will not be unacceptable, as being farther illustrative of an object of material moment in medical science; to trace a patient progressively in all his steps,—from the time of entering the hospital porch, till the period of his perfect recovery and final discharge to his ordinary occupations and duties. The sick person who is unfit for business or duty, marked as a fit subject for hospital treatment, is conducted to the receiving-room by the non-commissioned officer to whom the task of collecting sick is assigned. The patient, as disposed suitably in the receiving-room, is examined correctly by the physician or regimental surgeon; the nature of the malady is precisely ascertained, and notice given to the proper servants to prepare the bed. As the early stage, or first beginning of acute disease is the time at which medical means are most effectual,—the period in short, at which they have the fairest chance of precipitately arresting the progress, or materially diminishing the force of the fever, it necessarily becomes a rule of indispensable necessity for the hospital physician to act decidedly and boldly at such time. It is then that the promptitude and decision of his professional exertions possess the power of shortening his future labours. But, as the purpose is important,

so the proper execution of it must be ensured by vigour, and seconded by the necessary apparatus of means. On this account, the receiving-room and other appendages connected with it are so calculated, as to present the facility of giving effect to all the various operations which the occasions of the patient may seem to require at this time. Bleeding, bathing, whether warm, cold, or alternate, are powerful remedies when employed with judgment in the commencement of acute diseases. They are sovereign in some forms of fever; consequently it is of importance that they be resorted to in just time, and that they be applied to the case—effectually in manner. Copious, or what is deemed by most persons to be profuse bleeding, often arrests the progress of continued fever at one stroke: it rarely fails of entirely changing its condition if the circumstances be proper in themselves, and if the process be judiciously conducted in management. It is deemed indispensable, where continued fever is accompanied with congestion or local inflammation of internal organs, particularly with inflammation of the lungs. As it is indispensable in such form of disease, and, as it is proved in experience that the useful means are followed with best effect where there is the least possible loss of time in application, it is plain that the receiving-room should be furnished with every kind of apparatus which is capable of giving force to the benefits of this important operation.

Time and circumstance are here every thing. Bleeding, which is decisive of cure as employed in the early stages of several fevers, is only temporizing in the latter periods of any. It is a valuable, but it is not an universal remedy ; for, experience informs us that there exist several kinds and conditions of febrile disease, in which it is not necessary, some, in which it is not admissible on any account. Where bleeding has been premised, carried to the suitable point in execution, and, where it has produced the effect expected from it, the next great operation in preparatory treatment, previous to admission to the sick bed, is the process of bathing, whether intended merely for personal purification or for direct medical effect. There are few persons, either in civil or military life, whose condition requires the aid of public hospitals, who do not require the purification alluded to ; and, there are few diseases where the process recommended is hurtful in its effects, if it be properly conducted. It is sometimes customary to wash the hands, face, and even the feet of sick persons at the time they are received into hospitals ; there are few hospitals in Great Britain where such rule of purification extends to the whole of the body ; it is however of great consequence that it should. A perfect personal purification is the first step of pleasure among the processes of hospital treatment. It is essential to the good of the patient himself, and the safety of

those who are near to him; and, being thus essential, it is necessary in carrying it into execution effectively, that the hair be examined, combed, washed with potash or soap and water, cut short, if overrun with vermin, brushed with a hard brush and completely purged of all pollutions. The head and hair being treated in this manner, the whole body is next to be washed with warm water, brushed with a brush armed with soap for the purpose of removing incruusted dirt and animating the action of the skin, previous to the application of formal bathing with a view to medical purposes. When the incruusted dirt is entirely removed from every cavity and secret part of the body by the action of the armed brush, the warmth, sensibility and animation of the surface increased as a consequence of the purifying process alluded to, the cold bathing, or warm and cold bathing alternated, modified and managed differently according to the differing circumstances of the case, is signal and decisive in its effects, restoring the healthy action of the system as it were by the power of a secret charm. The mode of management varies according to circumstances: immersion has advantages in some instances; in others, affusion by means of buckets, or sprinklings by means of large sponges in imitation of a shower bath, is preferable. When the process now described is finished, the body is wiped dry: in cases of feebleness and languor it is rubbed dry

with flannel cloths warmed at the fire. This is highly grateful to the sensations, even conducive to the purposes of cure. In other cases, where the external heat is great, there is no necessity for being curious in this particular: the moisture is soon exhaled;—and it may be left to exhale with expectation of benefit, most certainly without risk of injury. The process of bathing, particularly warm and cold bathing alternated, as it is seen to act with decisive effects upon the course of acute diseases, so well-authenticated experience proves it to be safe in its nature, and of great value in effecting fortunate changes upon the health of the subject.

The preparatory process of bleeding, purifying the skin and bathing the body, being conducted in the manner stated, carried to the useful point in execution, the patient, furnished with a clean shirt, a clean night-cap, slippers and a gown or robe de chambre, conveyed with care to the bed allotted for him in his proper ward, is so disposed in his place as to undergo, with the least possible inconvenience, the remainder of the medical discipline that may be judged to be yet necessary in his case for the perfecting of his cure. It sometimes happens that the course of the disease is positively arrested, it happens often that its force is broken by the effect of the processes which have been just now described; but, though disturbed or broken,

even apparently arrested in its course by the operation of the causes which have been noticed, its foundations are not to be understood to be, in all cases, radically subverted: even if subverted, it is well to be slow in believing the extent of the seeming success; for a disposition to recur at a short interval often lurks unseen: hence, other means become necessary in security, as preventive of relapse, or stimulative of farther progress in the fortunate course. Whatever form of remedy be administered with this intention, whether emetic, cathartic, sudorific, sedative or stimulant, the operation must be carefully watched. If the effect be not such as is expected in the given time, the means are to be repeated, changed, modified, and so directed as to ensure the desired object in its full extent. It is always to be carried in mind in the execution of these processes, that a public hospital is not a place for temporizing; the physician has no motive for it on account of his gains, and fortunately there is no necessity for it on account of the prejudices of the patient, who does not presume, as in other cases, to prescribe for himself. He remains, when disposed in the manner stated in the ward allotted for his reception, ready to submit with patience to such treatment as is judged to be suitable in his case, till such time as the signs of returning health are manifestly established, or till the force of the malady, by increasing irregularly and alarmingly, gives ground

to apprehend that the event will not be fortunate. In the first and prosperous case, he is moved on, as he attains a certain point of recovery, to the ward allotted for persons in the first stage of convalescence, submitting to be washed, bathed and new clothed in a complete and perfect manner. The recovery advances, and at another marked period in the convalescent progress, he is conducted to the ward set apart for the last class of hospital subjects, submitting in a similar manner as formerly to a new purification, and receiving an entire change of apparel on entering into the new apartment. The next step comprehends the discharge to duty. It is an important one; and it is fit that it be not made without good evidence of security; that is, without decisive proofs that the healthy functions have reassumed their course with a fair prospect of permanence, and that the bodily strength is completely restored. In the other and less fortunate case, the suffering patient is removed to one of the small wards, destined for the reception of those persons who are extremely ill or extremely weak. Here the attention of the nurse is close and diligent, the apartment is secluded, and the harassed and weak subject, nursed, with care, is permitted to repose in quiet, till such time as his disease abates, or till the powers of his animal nature yield to the hand of death.

It is customary in many hospitals, military and Ticket.
 not military, to write the name of the patient, to
 note the character of the disease and date of ad-
 mission on a ticket affixed at the head of the sick
 person's bed. It will be further useful in a medi-
 cal point of view to note with red ink, as more
 distinctive, the date of the commencement of the
 illness, the precise hour of attack of acute disease,
 the date of crisis, noting at the same time whether
 it be natural or produced by art, the date of re-
 moval to half diet, to full diet, the date of the
 final discharge to duty, with the dates of interme-
 diate reverses, termed relapse, comprehended with-
 in the period of the patient's confinement in hos-
 pital. This notice, which is easily kept, is to be
 considered as an authentic document serving use-
 ful purposes, enabling the curious physician to
 trace the history and mark the course of fever with
 precise accuracy; thereby leading to valuable re-
 sults on an important subject of medical re-
 search (A) *.

The medical arrangement of hospitals being di- Returns of
sick in
hospital.
 gested according to a methodical rule, the ma-
 nagement conducted rigidly according to a pre-
 scribed form of practice, the next point in the pro-
 cess relates to the exhibition of a correct view of
 the result as verified experimentally in different

* See Table, N^o V. at the end of this Chapter.

scenes of service. It is necessary to manage things well in the first instance; and it is useful to shew how things are managed for the sake of presenting instruction to others. Hence the purpose and value of hospital returns. Hospital returns, which are condensed histories of health in a given circle of the community, consist in exhibitions or well-digested views of the amount of those who are sick or ineffective in a certain part or division of the military force, expressing the relative proportions which diseases bear to each other at different places and among different people, the proportions which obtain relatively in the amount of mortality, in different seasons of the year, in different countries, or districts of country, among different classes of people, and in different classes of disease.—Such is the nature of this instrument; and such are the points comprehended in the form of return which is now exhibited. The utility of a well-digested sick return is obvious to every one; yet it is true, however strange it may appear, that sick returns are not constructed in this country, either in military or other hospitals with the whole, or even the material part of the useful purpose in view. The most perfect, yet produced, cannot be said to be so contrived as to convey just and correct information to the military officer for the due calculation of the operation of morbid causes on the health of armies; to the physician for facilitating the means of tracing the propor-

tions among diseases and their relative effects as acting on human life; to the statesman or political economist for presenting a true picture of the sources and fatal progress of the evils which originate in the defects of economical arrangement. Any notice which the author has been able to obtain concerning the sick returns of common hospitals and dispensaries in Great Britain has led to no useful conclusion; even the sick return of British military general hospitals comprehends nothing more than a list of general terms, *acute, chronic, wounds, ulcers, venereals, punished, itch, convalescents*, with the gross number admitted, cured, and buried in a given time. It is plain to any one who considers the subject with attention, that a list, so ill defined and so loosely connected, cannot possibly be of any value to the military officer, as directing his views to just results in military calculation, or to the medical officer, as informing his judgment concerning medical effect in the history of diseases. It exhibits no correct movement, or estimate of the balance of things; and, referring to no proportion between the effective and ineffective part of the force, the mind is perfectly in the dark on many of the important points of information which ought to be derived from a view of hospital returns. The regimental form of sick return, constructed of late and now adopted for the use of regimental hospitals, though not sufficiently precise and explicit in all its parts, is better

digested, and comprehends more points of useful notice for the military or medical officer than the general hospital return now alluded to. As the total strength of the corps is exhibited on the face of the regimental return, a knowledge of the proportion of the sick or ineffective in a given number of men, variously disposed and differently stationed, is thereby ascertained with accuracy. This establishes a fundamental point of calculation regimentally; and, this being done, an important point of information is presented to the judgment of the higher officers for application to useful purposes in general arrangement. When the basis of the regimental return is correctly laid, the construction of forms of greater complication for purposes of more extensive information is easy, and the result is sure. As it is useful that the medical history of troops, serving in different districts, in different armies in European, or in remote climates, be collected, condensed and arranged in such manner, that correct and instructive inferences respecting the occurrences which are likely to arise in the various conditions of service, either at home or abroad, be placed before the eye of the commanders of the military force, or of the higher officers of the state; so the sick return is the authentic document calculated to give information on this subject: the form annexed will, it is presumed, open the way for ascertaining this end:—it is important and

highly desirable that it be ascertained with accuracy.

A sick, or hospital return, is divided into columns for the precise specification of the requisite points of information. The first comprehends the total number of souls in the military circle, the rank and file and non-commissioned officers of a battalion, regiment, brigade or army; the second, the number of persons reported in the sick list, as incapable of productive labour or military duty; the third, the specification of diseases, the cause of the inefficiency; the fourth, the number admitted upon the sick list in a given time, in a week, a month, a year, in each class of disease and in the whole; the fifth, the number of each class discharged from the list, cured of their incapacities and restored to their occupations and their duties; the sixth, the number in each class and in the whole who happen to die, and who are thus struck off from the lists of duty for ever: and lastly, the balance or amount, in each class and in the whole, of those who remain at the end of the period as yet ineffective, incapable of their usual occupations or their military labours. Such are the important columns of a sick return: to these are added some explanatory ones, calculated to shew the number of persons who, during their hospital confinement, experienced changes or reverses, usually called relapse; also the average

duration of the malady, or time required for the restoration of health in each class of disease, and in the whole. A sick return, constructed in this form, exhibits in figures a connected and correct history of the movements which relate to health, viz. a total of the number of souls in the military circle specified who are liable to become hospital subjects, a total number of the ineffective, a specification of disease or cause of inefficiency, the movement among the diseases, comprising a result of the effect of medical treatment, or of time and accident simply on the course of the malady, accompanied with such collateral explanation as enables those persons, who are moderately acquainted with the laws of nature and animal structure, to form an opinion of the actual force of the prevailing morbid causes and the professional ability of the physicians, who enter the lists of combat for the purpose of opposing the destruction of their effects.

Advantages
derived
from a con-
sideration
of such re-
turns.

The advantage to be derived from a view of returns of sick constructed according to the above form is obvious, whether considered as relating to the purposes of civil society or to the uses of the army. As it is radically in the health of the people that productive national power consists, so it is in the health of the soldier that we look for the power which produces effect in war. It is therefore of importance that health, which is so

essential for the production of effect in war or in civil life, be guarded with care and strengthened by the best means which human wisdom can devise. But while this is self-evident, and while the preservation of the active powers of man is so important for the prosperity of the community, the knowledge of the best means of preserving the activity comprehends a particular study:—it can only be attained through a train of accurate observations, digested and well arranged in order. It is necessary, for instance, to consider and estimate with care the intimate operation of all the natural or adventitious causes, which have a tendency to unhinge or derange those movements of the animal machine upon which the vigour and activity of the individual depend. The possession of this knowledge, in its minuter parts, can scarcely be expected to be found in those persons who are appointed to rule nations or command armies; but, though those high personages are not expected to possess a physician's practical skill, it is indispensable for the due execution of their duties, that they be competent to estimate, and that they actually do estimate with precision the amount of general effects as they appear in the results of history. As they cannot act consistently and usefully at all times, unless they possess a knowledge of the causes which maintain human action in its course, or which tend to subvert its foundations, so they cannot be supposed to know or duly ap-

preciate the value of these causes, unless they have been furnished with the opportunity of observing their operations, by the inspection of those authentic documents which comprise a history of health in civil society and in armies. Such documents are the returns alluded to in this place. As they are important instruments for the uses of the statesman or general, it is essential that they be constructed on a sound and simple principle, illustrative of effects for inferences of utility—the forms are annexed*.

In order to construct a sick return upon a systematic principle, it is necessary at all times to keep in view the fundamental operation of morbid causes on human health. The causes, which affect the actions of the human frame, may be arranged under two general heads, viz. natural or artificial. The common movement in the animal body, denominated life or manifestation of life, seems, according to our best observation, to result from, and to be maintained in force by the application of atmospheric air to the animal fibre, the animal fibre being supposed to be so formed in its structure as to manifest a figured action, and so perfect in its organization as to retain susceptibility of impression to the application of appro-

* See Tables, N^o VI. VII. VIII. IX. X. at the end of this Chapter.

priate causes. The vigour of health, or integrity of animal movement depends ordinarily upon the influence of an atmosphere justly balanced in the proportions of its constituent parts; the languor of action, or deviation from order upon errors in proportion, either by excess or by defect, of the particular ingredients which are necessary to form a just composition. Whether or not the common atmosphere be the product of the earth considered as an organized body, and, as such product varying in its qualities locally and periodically, in consequence of local or periodical variations in the laws of organic movement in the great body of the earth, is a problem not easily solved; nor is the solution of the cause material to practical utility in the case. Whatever be the source of the atmosphere, or by whatever process it is generated originally, its qualities are evidently varied and affected by qualities of soil, aspect and situation of place, and latitude of climate. Soils and climates differ, and different climates and different soils and situations in the same climate are noted for different forms of animal action, that is, different degrees of health and activity in the functions of the animal system. The source of health, or cause of disease is thus endemic, as connected with climate, soil and situation of place. The effects of the operation of these causes are known by anticipation; for they observe a law of uniformity in the progress of their course. The

operation of the endemic cause is evolved, or repressed by the operations of heat or cold, of moisture or dryness, consequently it is connected with season, climate and locality. The operations are calculable in their periods, and even in their degrees, for they follow a rule which revolves in regular portions of time, as dependent on general laws of movement in the great system of the universe. The history of endemic disease, characterized in this manner, implies the operation of a natural, plain and simple cause, following a periodical rule, rising or falling occasionally as varying in excess or defect, but not assuming a new form of action as the consequence of the introduction of a material of a new basis. The history of febrile diseases as it becomes epidemic is more uncertain and perplexed. The epidemic presents itself adventitiously, sometimes invades suddenly, rages with violence, and at last disappears unexpectedly,—apparently in the midst of its sources. The periods of its appearance and decline are irregular and uncertain; sometimes annual, sometimes occurring only at intervals of several years. The nature and constitution of the cause which gives this frequency and often malignancy to disease is unknown; the origin is even obscure. If it be actually supposed to be a product of the economical system of Nature, suffering a real but unknown derangement from its usual course, more general or more partial in

extent according to circumstances, but still the product of natural causes; its qualities are nevertheless veiled from the view; its rise, progress, and decline not calculable, as not bound by the laws of the annual period. The form of the action is influenced or modified by circumstances of season, climate, local situation and sensible qualities of the atmosphere; its existence does not depend upon the obvious changes and conditions of place or season. The disease or cause of the disease so modified is termed epidemic, inasmuch as it comes adventitiously: coming adventitiously, it pervades a district or tract of land generally, though not with the same degree of force in every point—moving rapidly and extensively in some cases, slowly and partially in others. The mode of diffusion is involved in obscurity. Where the source or fundamental cause exists in force, the disease, or effect consequent to the action of the cause, apparently—not certainly possesses the quality of propagating itself by infection. The infection of the epidemic, if infection actually exist in the case, is probably a quality engendered by accumulation of subject or other circumstance, and thus connected with a disease to which it does not justly belong. It is not ascertained, by any good evidence, that epidemic infection is transportable to a distant place through a foreign medium; and, if not transportable through a foreign medium, in a common condition of the atmosphere

it may be safely inferred, that it does not owe its origin in the first instance to a contagion generated in the human body. It is thus more than probable that the febrile disease, as epidemic, independently of its specific character, is not capable of multiplying itself by any form of animal operation. It may indeed be considered as a demonstrated truth that it is not, if any faith be due to experience in the fairest fields of trial; but, though the case does not seem to be ambiguous in the eye of those who are masters of their reason, yet multitudes are still disposed to doubt, or rather to disbelieve as not competent to examine things with impartiality. The history of epidemic sickness is so connected with the fears and prejudices of mankind, that it is difficult, if not impossible, to hope to disentangle the truth from the mazes of deception and error in which it is involved; the theory, or rather the real matter of fact, for ultimate causes are inscrutable, is thus likely to remain a subject of controversy to remote generations.

In some degree connected with the general epidemic in manner of course, but differing in the specific nature of the cause and rule of propagation, are certain diseases of the contagious character, viz. small-pox, measles, and various forms of exanthematous and erysipelatous affections. These usually appear at intervals, though not at

intervals exactly periodical; they rage with violence, exhaust the subjects who are susceptible of their action—and cease; or they become dormant in a manner not at all understood, the source of the cause actually existing, and subjects not constitutionally exempted from their action, yet abounding within the ordinary circle of their influence.—We observe the fact; our limited knowledge does not reach the reason of the thing. It may be observed further on the subject of specific disease, that the character is influenced and modified by the reign of common causes; no condition of common cause is powerful to annul its existence. It appears occasionally in all climates into which it has been originally introduced; and it runs its course according to its own rule, amid variety and change of relative situation.

The maladies, now mentioned, are considered as proceeding from the operation of causes which are produced by the constitution of natural things, varying by excess or defect according to the common law of natural movements, and more or less regular in their course as influenced by circumstances and conditions of place and subject; or, they proceed from the operation of causes, produced originally by accident or deviations, but so nursed and fostered by circumstances which are not appreciable, as to have assumed the quality of engender-

ing and engrafting an imitative process in animal action, calculated to create a distinct, specific and multiplying material, which, produced by the plastic operation of Nature, exerts its action as applied to a new subject, rendering itself perpetual by propagation, and diffusing its seeds widely by more obvious or more obscure means of communication. The one class of causes of acute disease springs thus distinctly from natural, endemic or epidemic sources: the other is of a doubtful and mixed nature. It does not belong to soil endemically; but the record of its original production is lost in remote antiquity, so that it claims the title of being classed among the permanent causes of disease entailed upon mankind by some of the chances of accident. These great sources of acute disease, viz. endemic and specific, whether sporadic or epidemic, are natural causes acting by excess, or derangement of quality, or they are specifically adventitious, incorporated into the system of natural causes by long habit. Besides these, there exists another entirely artificial, arising fortuitously in society and producing a class of diseases, created as a manufacture of error in the economical arrangements of social life,—the product of neglects in police, or the offspring of the vices of mankind. These are formidable in number, and important on account of their dangers. They demand most imperiously the attention of statesmen; for they originate in the errors or defects of political foresight or eco-

nomical care. Among the first and most fatal of these artificial maladies is ranked the febrile disease, which shews itself in crowded and ill-ventilated apartments, and, which once produced, propagating its kind by contagion, extends the sphere of its action, by a multiplying process, to a multitude of subjects. As the source of this evil consists in erroneous economical arrangement, it is consequently to be considered as artificial. Its existence reproaches science; yet it is among nations which boast of science and refinement that it most abounds. It is frequent in manufacturing and sea-port towns among the poorer classes of inhabitants, who are lodged in low, damp and ill-ventilated apartments, badly clothed, dissipated in morals, idle in habits, or chiefly employed in sedentary occupations. It is the scourge of armies as an effect of accumulation, whether in camps, barracks, or transport ships. Its ravages are there great; insomuch that the aggregate amount of its destruction may be computed as exceeding that of the sword. Of this, the history of late years furnishes melancholy and convincing proof. And here it may be remarked, that, as the premature loss of life is one of the calamities which mankind mourns; so, if such loss arises from the operation of artificial causes, it may be admitted that it presents double grounds for regret; for it proceeds from a want of just knowledge of things, or from a sentiment of indifference to miseries, which is

worse than want of knowledge. It is too often witnessed, that instead of correct calculation, adequate provision, and consequent precise effect in a projected service, the means are ill measured, profuse or deficient, as formed from a presumption, rather than from a knowledge of the wants; consequently the execution is precarious, the effect in a manner committed to a hazard of chance. The present times furnish many instances of such miscalculations in the medical and economical provisions prepared for the care of the health of troops;—and, amidst the boasted discoveries of science, and the vaunted progress of the medical art, it can scarcely yet be said that a reasonable share of the useful fruit is applied scientifically in practice to the purposes of military life. It is frequently seen that the operation of morbid causes of artificial manufacture produces much destruction in its first act, particularly in armies: its consequences extend farther than to the immediate privation of life; feeble health afflicts the subject during the remainder of his days, and a retrograde generative process is engrafted on his progeny.

The febrile disease, the product of an erroneous or defective disposition of things, is a destructive form of disease among soldiers and manufacturers, more especially among persons crowded together in masses, whether by constraint

or otherwise. It arises most frequently as the consequence of an arrangement in which the subject who suffers has no voice or option of choice. There are others which infect society widely as the offspring of individual error. These are the fruit of loose and profligate morals: individuals are themselves responsible for their propagation; they experience punishment in their effects. The subjects of this class of diseases are ordinarily numerous in large cities, and their miseries are great; for, with bodily pain, they are liable to suffer from the stings of remorse.

The diseases hitherto noticed are principally forms of acute diseases, that is, of such diseases as are prominently distinguished by a change of movement in the general actions of the animal system. They are primarily general and acute: there results from them secondarily as consequences of irregularity in the primary action, either as an accident in the natural course of the disease, or as the effect of artificial treatment, a variety of chronic complaints, or local derangements, which assume new forms, and terminate the existence of the subject after a variety of ways.—This boundary of primary and secondary, general and local, acute and chronic marks a leading point of distinction in the construction of sick returns.

The causes, which have been mentioned in the preceding pages, comprehend an outline of natural or artificial causes, the operation of which deranges the healthy action of the animal system variously in form and degree. The existence and intensity of the power of morbid causes, proceeding from a natural source, bear some relative proportion with the presence or absence of heat and moisture. The material, which is found every where in the external covering of the earth, abounds in a more eminent degree in swampy and rich soils; it is brought more prominently into action by exposure of new surfaces; and it acts with strongest impression upon new subjects. As the natural causes of acute diseases are most abundant in rich soils, so the artificial causes of similar maladies are the more peculiar growth of rich and luxurious nations, where masses of people are brought together artificially, and confined within narrow limits for artificial purposes. This is an appendage of the state of war, or of a large manufacturing town, where the working parts are collected together for the better concentration of the official effect. The causes of diseases of a general character, viz. endemic as the product of soil, or personally contagious as the product of personal accumulation under peculiar circumstances of subject, are rendered virulent in their qualities and fatal in their effects by quantity and concentration: they become mild, even harmless

by division or diffusion. In this manner, the dry, barren and open country is usually healthy, inasmuch as the exhalations from the surface are there scanty and diffused; the swampy, rich and broken soil is usually the contrary, as presenting exhaling points, emitting morbid causes at a concentrated focus. The analogy of the soils is applicable to the conditions of the animal product: a thinly scattered population knows few or no artificial diseases; the accumulation of masses of people within confined bounds exhibits diseases of different degrees of force and virulence, as concentrating the causes artificially into a focus of morbid emanation. The force or virulence is referred to undue accumulation; the remedy obviously consists in diffusion. The rule of quantity or apparent concentration, which appears to affect the condition of the cause of the endemic and certain classes of contagious fever, does not obviously produce any difference in the degree of action of such diseases as are of the specifically contagious class. There quantity, and such apparent concentration of cause, as we are capable of discerning, are perfectly immaterial: the smallest possible portion of the infectious matter produces the specific disease; the greater quantity does no more. In this manner, though the preventive cares may be directed to dissipate and dilute the cause, as well as to blunt the sensibility of the subject in one case, they are to be directed chiefly

to render the habit less irritable, or less susceptible of impression in the other; for, if the cause exists in its integral parts, the dilution or division of the mass of matter amounts to little or nothing.—But to resume the subject of the hospital or sick return.

The returns of the inefficient part of the mass of the people or military body, constructed after the manner exhibited in this place, are capable of imparting useful information to statesmen who direct the great affairs of nations, or to generals who superintend and direct the operations of armies in war. They comprehend the history of health; and they exhibit, summarily in figures, a correct estimate of the causes which are found by experience to derange its movements. The simple return, constructed for the smallest circle of the military body, company, battalion or regiment, accompanied with a general notice of soil, situation of place, and temperature of weather, forms a fundamental material of political and military information of great importance. A certain number of simple returns, the materials digested with care and condensed systematically in order, forms the compound return, comprising the history of health in different circles, in different brigades or different divisions of troops. It is capable of being expanded, so as to embrace districts, kingdoms and climates, battalions, brigades, divisions or armies

of any extent, the comparative view being carefully preserved with the original local point, or the smallest circle of subjects through all the steps of the gradation. Such returns are authentic documents, to be esteemed as sure grounds upon which to form calculations. If constructed upon a good plan and faithfully executed, they present a picture of the existing effective power of the nation or army, accompanied with evidence of the extent and force of the operation of the natural or artificial causes, which act upon the health of the subject:—where the source and extent of morbid causes is known, the preventive remedy presents itself by an easy inference.

If a history of the health of armies be placed under the eye in a condensed form and connected view, during a series of years and in a variety of scenes of service by means of the returns alluded to, such informations will not fail to arise from a due consideration of the materials so presented, as will serve to produce an estimate and correct calculation of those things which are necessary for the purposes of a specified service during a given period of time. There will then be few disappointments resulting from wants which have not been foreseen. The course of natural causes follows a regular rule: the effects may be known by anticipation, and, being known beforehand, it becomes the duty of those, who are appointed to

make the official provisions, to act in such manner as to prevent, at least to diminish, by the timely and judicious application of appropriate remedies, the force of those evils which might otherwise commit destruction. But, while the recurrence of endemic malady is connected with the recurrence of season, accession of the quality which renders it epidemic is uncertain in time, the duration of its action not easily calculable :—it is an infliction which must be endured, if its sphere cannot be avoided. It may be a matter of doubt how far its nature can be changed, or its course arrested arbitrarily by the interference of art ; its violence may, notwithstanding, be mitigated by the application of various means which are placed within the power of medical practitioners. The cause of the personally contagious fever is an artificial manufacture, resulting from accumulation of subjects or other causes of erroneous arrangement. Error may be supposed to have ignorance for its source ; remedy is consequently found in a just knowledge of the nature of things.

The considerations now stated are important in themselves : they merit attention, but they are often overlooked by those who are placed to rule in the higher offices of the state. The causes, which balance the health and ensure the capacity of productive labour among the mass of the people, cannot be understood without more know-

ledge of the measure of action of physical powers than is usually comprehended in the education of men who are highly born,—introduced into the world with pretensions to rule states or command armies. If the possession of such knowledge be despised by the great, as unworthy of their rank, or unnecessary to their prosperity, there is error in judgment. It is proved in all histories, from the earliest periods of the world, that if the fruits of knowledge be not appreciated and exercised in the actions of public life, there necessarily occur misfortunes which terminate in the diminution, even in the destruction of a nation's power. The great then lose, through ignorance, the place of elevation which their ancestors had attained by knowledge. It is evident that the statesman, who undertakes to conduct the concerns of a kingdom without correct knowledge of the physical power of the parts, implying an acquaintance with the causes which augment or diminish their energies, as he does not calculate his measures by a consistent rule, so he does not meet with success according to his sanguine expectations. The general who is ignorant of the physical and moral properties of man, as well as of the power of the various causes which act upon his mechanism, is still less certain of the event. He commits his fortune to a hazard of chance;—with knowledge of things, the course is calculable and the effect comparatively sure. The nature of man, in its varied ex-

tent, is the subject of political and military operations, whether the object be to concentrate, and resist; or to extend, over-run and conquer. It is, therefore, to a knowledge of the nature of man in all his relations that the palm of political wisdom is due; it is a just knowledge of human nature, consisting in a right mode of concentrating and applying power, which gives success in war, and bestows reputation upon generals. It is with a view to give aid in the useful purpose, which relates to this subject, that the returns exhibited in the subjoined Tables have been constructed. They are intended, as the medium of placing a certain portion of information, respecting the connexion of cause and effect, before the eye of political and military chiefs. If laid on correct foundations, condensed, and yet detailed with all the corresponding shades of useful division, they present the whole circle of informations in a narrow space. If faithful, as they must be supposed to be, they cannot fail of being instructive instruments for the purposes of the higher officers of government, shewing correctly, collectively and in detail, the effects produced upon animal health by the operation of morbid causes, arising from a natural source, or an artificial error; they exhibit a view of the scourge which persecutes vice in civil life, they mark the ruin which follows indiscipline and faulty arrangement in war. A statesman or general may attain knowledge of the true state of things

by means of his own powers of discernment, in viewing a document so authentic as that now exhibited: it presents a collected and tabular picture of the physical power and moral course of nations or armies, which is the subject of the statesman's or general's calculations. It is from such a source that those high personages may be furnished with the opportunity of penetrating with some degree of certainty into the nature of the causes which augment or diminish the energies of their instruments, either in civil or military operations. The suggestions which it presents are facts—not fallacies, internal evidences of reality—not surfaces of delusion, which, as things now are, too often impose upon the inexperience of those who are placed in official stations of command.

When hospitals are constructed and equipped in the manner described, the provision of means deemed necessary for executing the official duties in due order and with proper effect next attracts attention. The means consist of medical officers of different ranks, nurses and attendants upon sick of different qualifications. It amounts to little that the hospital be well constructed, well equipped and arranged in good order in all its parts: unless the medical officers be able and diligent, the nurses and attendants humane and attentive, the ultimate effect will not be fortunate.

Provision
of medical
officers.

If the education of that part of the nation, which is destined for medical purposes be conducted according to the plan proposed in the preceding pages, the constituted medical officers of the army cannot be otherwise than instructed in their art ; for, without authentic proofs of their actually being so, they will not be appointed to official trust. If, qualified in knowledge, they fail in diligence they are not supposed to be suffered to remain in a responsible station ; for the idle and negligent are held to be useless, if not bad subjects. The chief medical officer of the hospital, according to the projected arrangement, whether or not a physician by diploma, must be known by the test of experience to possess a physician's knowledge ; the professed physician, though not a surgical operator, must be understood to embrace, in the system of his education, a knowledge of every thing which relates to the diseases of the human body, whether general or local, internal or external. The person, denominated surgeon of regiment or brigade, is the physician and chief of the brigade hospital in military service. He delegates a part of the duty to the battalion surgeons ; the assistants execute orders, observe the practice of the chiefs, analyze the more difficult cases with care and diligence ; and, thus, learn to discern the real truth from its appearance, by the experience which they see verified in the hands of others : so instructed they proceed to undertake the greater

duties of hospitals in their turn, with a fair prospect of success. The number of medical officers for a given force is supposed to be such as has been suggested in the preceding part of this work; it may be added that, where a good practical system of management exists in armies, the duty of the military hospital, even in times of great sickness, cannot be supposed to bear hard upon the persons who are appointed for the execution of it:—they are abundant in number; they are supposed to be qualified in knowledge.

It is well known to all observing physicians, that a great source of success in medical practice consists in judiciously choosing the proper time of administering remedies. Hence, in order to render the purpose effectual, as well as to facilitate the task of labour, it is useful to arrange a mode of dispensing medicines under the eye of the officer who prescribes. Where this is done correctly, it is known to the prescriber himself that the remedy ordered by him is actually administered; and further, that it is administered in the circumstances which are naturally supposed to give the fairest expectation of success, as being those which immediately called for the prescription. Where this is not done in the instant, there is sometimes a total neglect, almost always a delay of time; a circumstance, which often produces such a change in conditions, particularly in

Rule of administering medicines.

the case of acute diseases, as renders the application of the prescribed remedy, not only unnecessary, but not unfrequently improper. The judicious management of bleeding or bathing arrests the course of fever instantaneously in many cases, when applied at the just point of time; the same remedy, after the delay of a few hours, not only ceases to be useful, but the application of it even sometimes becomes unsafe. For this reason it ought to be established as an indispensable rule of discipline, that the person who prescribes, whoever he be, witness the exhibition of the remedy prescribed. The rule is easily executed in regular hospitals; if easily executed, the execution of it promises great advantages to the truth of science. If the physician, who prescribes, see the remedy applied or administered in his own presence, he will be less liable to be deceived in the consequent effect; hence, he will less readily propagate error or unwillingly impose a deception on others. The purpose in view is important; and, in order that it be faithfully fulfilled, it is understood that an assistant be present in all cases, ready to execute, without loss of time, whatever process of discipline or operation of art the physician may think proper to direct. In the case of bleeding for instance, the surgeon or assistant surgeon is supposed to open the vein as soon as he receives the physician's sanction, the physician himself witnessing the act and directing

its mode, estimating the quantity of blood to be taken away by demonstration of effect arising in the course of the process, rather than by a defined measure of ounces presumed to be just measure, and noted as such in the prescription-book. In like manner, when an emetic, glyster, cathartic, blister or any other form of remedy is ordered by the prescribing physician, it is implied in the rules of the hospital discipline that it be administered without loss of time. In execution of this view, hospital remedies, such as are most suitable to the nature of the prevailing maladies, are always ready prepared, varied in quantity of dose as adapted to the varying circumstances of the subject. Being ready prepared, they are administered on the instant under the eye of the physician himself, who must not be allowed to persuade himself that he has done his duty, unless he has actually witnessed the exhibition of all his important prescriptions:—he may then be sure in his opinion concerning effect. Where the formula ordered in any one case does not exist among those already prepared, the prescription is supposed to be dispatched instantly to the dispensary, prepared without delay, and administered before the physician leaves the sick apartment.—Such is the measure recommended, and such as the author has practised. It is simple, abridging labour and effectually executing work.—The task is performed by a dispenser attached to the hos-

pital establishment in aid of the medical assistant ; the dressings for the surgical patients are prepared by a surgery man attached to the person of the surgeon.

Station of
surgeons in
time of ac-
tion.

When sick men are disposed in sick wards in the manner described, the medical duties arranged correctly according to a rule of method and order, the business is comparatively easy, as capable of regular execution not liable to the disturbance of foreign accident. The case is different in actual war ; for, there the circumstances change daily, sometimes hourly. The disposition of surgical aid, for the care of the wounded during the continuance of the combat in the field, is important in a high degree. It deserves to be so adjusted as to produce a correct effect at all times ; but, though so necessary for the useful purpose, it does not yet appear to have obtained a sufficient share of attention in the British army. It is oftener left to the surgeon's own discretion than regulated by the direction of the military officer, who, as the only person supposed to be master of the design, is the only person capable of making a just disposition of the means allotted to the execution of this important service. It thus happens, as things are, that surgeons are sometimes too forward—exposed to dangers, consequently little useful, as not masters of the cool deliberate use of their powers necessary for the just

application of their art; sometimes they are too backward—not to be found in the station where they ought to be, consequently useless as if they did not exist. These are evils, and they are evils of great moment necessarily demanding a remedy. The remedy is important, and fortunately it is not difficult. It implies no new provision of means, consisting merely in the institution of a regular and systematic arrangement of the existing surgical aid, as calculated for the purposes of the field in the time of action. To know that surgeons are able in their art, and that they are near at hand so as to give prompt assistance in time of need, inspires the military of all ranks with confidence. As this is true, and as a sentiment of confidence is a valuable plant in the soldier's breast, it is obvious that the surgeon's aid should be placed near at hand, with the view of ensuring an effect which is so desirable; but while near at hand for the purpose mentioned, it is farther indispensable that the surgeon's person be guarded from the chances of danger, so that his aid may be calculated as a permanent aid. It is obvious and need scarcely be remarked in this place, that a surgeon is rarely to be met with, who is so much master of himself as to be capable of performing the greater surgical operations correctly, while stationed in the field of battle under the range of the enemy's fire; even were surgeons to be found of so firm a courage, it would be inconsiderate and unwise

to expose their valuable lives to fruitless risk, or to expose the wounded soldier to fresh dangers without useful purpose. The adjustment of this matter, viz. the security of the surgeon and the prompt relief of the soldier, is a point of high consideration. It is attained in one view by the presence of surgeons in the field; in the other by choice of a safe position. The arrangement of the means in this case belongs to the military officer commanding; who, as knowing the nature of the ground and the chief points of attack and resistance in the impending military action, must be considered to be the only person qualified to form judgment on the subject.

The proposed provision of surgical officers is presumed to be sufficient for all necessary purposes in ordinary circumstances of service. A brigade, consisting of three thousand men, is furnished with ten medical persons under the name of surgeon and assistant surgeon, viz. three battalion surgeons, three battalion assistant surgeons, one brigade surgeon or chief, with three brigade assistant surgeons, as extra for actual service in war or for medical purposes in foreign climates. The brigade assistants are destined to accompany the brigade as body surgeons—to be immediately present in the field in the time of combat. They are exposed to the dangers of war nearly the same as military officers;

for they are expected to be at hand in the event of any one being so wounded as to incur a risk of life from hæmorrhage. This is indeed an accident which does not happen often from the effect of fire-arms; but it happens sometimes, and the apprehension of it hangs upon the mind of most military people. As the case is possible, and as it is dreaded by almost all persons, it is necessary that a remedy be provided against the contingency. This consists in the immediate presence of the brigade assistants. The brigade assistants being disposed in a convenient manner for the application of immediate aid, the brigade surgeon, the battalion surgeons and battalion assistant surgeons are supposed to be stationed in the rear,—beyond the reach of the enemy's direct fire; covered by position from the effect of cannon shot, but stationed as near to the scene of action as is consistent with safety. The stationing of the surgical aid, under the expectation of a general and regular action, is comprehended, as already observed, among the arrangements of the military officer commanding. It is not an inferior concern; and, in order that it be conveniently disposed with regard to distance from the field, and that it be so accommodated as to have the chance of acting with its full powers, it is essential that it be placed under the cover of a roof, at least that it be protected, as much as the nature of things admit, from rain,

wind, dust and such annoyances as are likely to interrupt the deliberate application of surgical skill. The brigade surgeon, the battalion surgeons, and the battalion assistant surgeons being disposed in a safe and convenient position, the brigade assistants accompanying the troops to the immediate scene of action for the purpose of doing the needful in the field, the quarter-master of the brigade or battalion assumes the charge of conducting, or transporting to the brigade field depot, such of the wounded soldiers as are in want of surgical assistance. The quarter-master is supposed to be suitably prepared for the execution of this duty. He is intrusted with the command of the pioneers and musicians who take no part in the action, but who, furnished with bearers of a light construction, are appointed to transport, with all convenient speed, those persons who are so badly hurt as to be rendered incapable of walking.—The depot for wounded is in the rear; its position safe, and its place rendered conspicuous by a flag or signal, distinguishable from the ground on which the action commenced.

The idea of prompt assistance is grateful and consolatory to the wounded soldier in the first instance; its actual application, in the proper time, is conducive to the prosperous cure. Extraneous bodies irritate and cause wounded parts to inflame; they therefore require to be removed,

and, it follows that they be removed as completely and as speedily as possible. The removal is effected with less pain and inconvenience in the beginning than after some hours or some days have been suffered to pass over; and, when properly effected at such time, a long train of evils is prevented, the cure is speedy and comparatively perfect, the pains and tedious suppurations, usually occasioned by splinters or the presence of foreign substances among the wounded parts, are avoided. The first dressing of the wounded limb is important: it ought therefore to be skilfully and carefully conducted; but it cannot be skilfully and carefully conducted, unless the surgeon be stationed in a secure position so as to be master of his judgment.

When the first operation is performed and the first dressings applied, the wounded persons refreshed in the best manner that circumstances admit are supposed to be sent off by divisions, in spring waggons or other suitable conveyances, to the brigade hospital under charge of one of the battalion assistants. If the enemy give way, retreating, but not routed, the scene of action advances, and the position of the surgical depot requires to be changed. As resistances still remain in front; the surgeons, at least a proportion of the surgeons, advance and assume the station pointed out by an accredited officer. This, as in

the former case, is understood to be a station or covered place, as near to the scene of action as is consistent with safety. It is rendered conspicuous by a flag, and it is known to the wounded of the brigade by the distinctive colour of the flag.

If the measure now proposed be rightly conceived by those who direct the great operation of war, and executed with order and regularity by those who are appointed to act, much of the confusion, which so commonly occurs in the management of the wounded in the actual field of battle, bids fair to be avoided: life will probably be sometimes saved; and, as no one will be left helpless and unprotected when deprived of the power of using his own limbs, confidence will be strong in the mind of the soldier. A proof is placed before the eye that he will not be neglected when he is disabled; for he witnesses the presence of an arrangement in the field, which serves to convince him that measures are taken to ensure for him the prompt and effectual assistance of the surgical art in all its extent. If the measure proposed be just and humane towards the soldier, its effect is economical of the real force of the army during the time of the combat. Where the conducting or transporting the wounded from the field of battle is committed to the quarter-master, who has under his command the pioneers and musicians of the corps, no firelock will be withdrawn from the line

without indispensable necessity. As the case stands at present, soldiers are seen to retire from the ranks in great numbers, some really, others pretendedly assisting their wounded comrades or their wounded officers. This ought to be avoided; for independently of the real diminution of force incurred by such practice, the example is dangerous in its effects. It is important that no soldier be induced by strong necessity or colourable pretext to turn his face to the rear during the continuance of the fight. The act is the beginning of fear. The eye has one forward point in view in the progress of a military action, the mind one sentiment—which is victory. The presentation of lateral objects, such as wounds of officers and comrades, is calculated to rouse foreign emotions in the mind; the feeling of humanity, which prompts the soldier to lend his assistance in pity, gives a justifiable colour to the retrograde step. It is unsafe to expose the soldier to be acted upon by this cause; it is unwise or improvident to leave a justifiable excuse to the effect of its operation: hence, the purpose and utility of the projected arrangement;—it diminishes chances and takes away the necessity or pretext for the soldier retiring from the ranks in the time of battle.

The medical officers being such in number and character as described, the nurses and attendants

Nurses and
attendants.

upon sick present themselves as the next part in the system of medical means destined for the execution of the necessary business of hospitals. It is reasonable, indeed obvious to every man's reason that the number should be estimated correctly, the duties allotted in general and detail with a view to economy of money and just execution of purpose. The sick, according to the projected plan, are brought together systematically, classed in apartments by their diseases and the circumstances of their diseases. Such measure diminishes the labour of the attendants by simplifying and condensing the duties. The duty being all of one cast and one tenour in the same ward, an opportunity is thereby furnished of more easily attaining a knowledge of the circumstances of the sick. The knowledge alluded to being presented in a condensed form, the best means of relieving the wants and nursing the sick are thus facilitated and ensured, as a consequence of the system recommended. No person is permitted to remain in a sick ward in the case supposed, who does not require a considerable share of attention from the nurse; the nurse is necessarily believed to experience a feeling of interest in the fate of every one. This uniform condition of persons, so necessary to ensure a just attention on the part of nurses and good order in economy, is important in its effects: it serves to condense and unite the views of the attendants; a purpose not obtained where the

sick and convalescent are mixed together. The convalescents, as persons with whom the nurse has little to do, may be considered as so many points or objects which break the routine of duty, disturbing that regular and animated train of official labours which is witnessed in the other case. It is mentioned in the preceding pages that the wards, set apart for the reception and accommodation of acute disease in its earlier stage, are calculated to contain twelve persons. For attendance on these twelve persons by day and night, a female nurse, with a male attendant as orderly, is known from trial to be a just proportion of servants. The female nurse, as intelligent of the circumstances of the sick condition, is constituted the superior; the male, or orderly assists with his powers of labour, where occasions call for the exertions of strength. Intelligence and tenderness are conspicuous in the female character; and, on this account, female nurses are selected for the chief care of the sick in hospitals. Males possess bodily power in a more eminent degree than females; and, on that account, males are provided as orderlies to assist in moving those who are helpless, or in coercing those who are unruly. The assistance, alluded to in this place, relates to the assistance which is required for those apartments which are destined for the reception of such persons as are in the first stages of acute disease. It is necessary for obvious reasons that there

be two persons in each ward: one person cannot watch always, and it is improper to leave a sick apartment, even for a moment, without an attendant on the watch.

The proportion of nurses and orderlies, here proposed, is proved in trial to be a sufficient provision of nurses and attendants for a ward of the dimensions specified, occupied by persons labouring under acute disease in its early and vigorous stage. The duty of the nurse is different in such apartments as are occupied by convalescents: as the nature of the duty is different, so is the number of the attendants allotted to its performance. A female nurse and male orderly are sufficient, even more than sufficient for attendance upon thirty persons in the first stage of convalescence, whether disposed in one or in two contiguous wards. The condition of the convalescent arrangement is understood to be such, that no person is admitted into it, or suffered to remain in it in whom a diseased action manifests itself with any degree of force; consequently the duty of the nurse and orderly is light and temporary, confined to the adjustment of the beds, the making the apartments clean and such other matters of service as the convalescents cannot do, or are not permitted to do for themselves. Such duties occupy but a small portion of the time; consequently the nurse and orderly have not adequate employment. Idleness is

hurtful in society in all cases; it is most particularly so among the servants of public institutions: hence, it is proposed, in remedy of this contingent evil, that those persons, who happen to fall into dangerous circumstances of disease which call for separation from others and a special provision of nurses and attendants, be committed to the care of the nurse and orderly of the wards allotted for the first class of convalescents. It does not often happen that there are more than one or two persons at one time, who require the special care of nursing and attendance alluded to, in an hospital of the specified dimensions. It may even happen that there are not any; but if there be two or three, the means of taking care of them may be trusted to the measure now proposed.—Such is the ordinary rule of allotting attendance for the sick in maladies of a common nature. The occurrence of diseases of specific contagion, as small-pox, measles, scarlet fever, ophthalmia, &c. is rare or contingent;—the provision of nurses and attendants is to be made for such occurrences only contingently.

The surgical division of the hospital, set apart for the reception of external local diseases, is arranged somewhat differently from that now described; consequently it requires a provision of nurses and attendants suited to the condition of its subjects. In those wards, which are occupied

by persons grievously wounded, the proportion of nurses and attendants may be fixed at the rate which is allowed for the wards occupied by persons who are in the early stages of acute disease. It cannot be less where the wounds are of a compound nature. In ordinary cases of local disease, viz. ulcers of the legs, sprains, dislocations, simple wounds, and simple fractures, venereal maladies, &c. one male attendant or orderly may be judged to be sufficient for the occasions of a ward of twenty-eight or thirty persons. The chief duty of the attendant in such case lies in adjusting the beds, in making the apartments clean according to the established rule, and in serving at the meals. In cases, on the contrary, where close attention is required from great weakness, or under sufferings from the pain of wounds or surgical operations, a female nurse, assisted by an orderly for night duty, forms a similar provision as that attached to the small wards of the medical hospital.

The convalescent, whether recovered from internal or external disease, placed upon the list of full diet and restored to the full possession of his physical powers, has no occasion for a nurse or sick attendant of any kind. He is able to adjust his own bed, to clean his own apartment, to wash and purify his own person. It is essential to his good as a soldier that he be obliged to do for

himself whatever he is capable of doing: it is however proper and necessary that an orderly be appointed to perform the services connected with messing; for it is against the rules of good order that a patient be permitted to enter the kitchen or cooking-place on any pretext whatever.

Such is the allotment of nurses and attendants for the care of sick and convalescents, accommodated in the manner described in an hospital of the dimensions specified. It has been tried by the author, found to be correct in its movement, and efficient of the useful purpose in all cases. The number stands as follows, viz. two female nurses and two male assistants for the wards occupied by persons in the acute stages of disease; one female nurse and one male assistant for the small ward set apart for the reception of dangerous medical cases, charged, in addition, with the superintendence of the convalescent wards of the first class, and the performance of the few services required by persons in the first stage of convalescence; one female nurse, and two male assistants, for the performance of the various duties of the surgical part of the hospital in ordinary circumstances, with an orderly, for arranging the concerns of the mess-room and for executing occasional or extra duties of fatigue. According to this calculation, ten persons,—nurses and assistants of nurses, are employed for the care of one

hundred and sixty sick and convalescent. The number, as proved in trial, is amply sufficient: efficiency in the act results from the manner of arrangement adopted for execution. Where the occasions of the sick require that persons be constantly on the watch, the means are here so disposed as to afford a relief of duty; but, where the functions of health are restored in convalescence, no establishment of nurses being necessary for real needs, none is provided for a superfluous purpose. It results from the arrangement here described, that those persons, who are actually sick and ill, have nearly double the quantity of attendance which is ordinarily allowed in military hospitals, the number of the hospital attendants, instead of being increased, is notwithstanding diminished in the whole by more than one third; for where no attendance is required in necessity, none is provided in formality. Hence there arises a decided gain in the saving of means, which is public economy; there is also a more ample provision of relief for real wants, which is humanity. One nurse, or attendant upon sick, is allowed for every ten persons by the usual regulation which obtains in British military hospitals; here there is one for every six of such as are still in the acute or early stages of acute disease, with a nurse and occasional assistant orderly for one or two of those who are withdrawn from the common wards, as persons placed in dangerous circumstances of

disease requiring an extraordinary degree of care*.

The number of nurses and assistants of nurses, usually termed orderlies, being fixed for an hospital of given dimensions, the order of the duty arranged after the manner which is pointed out, the next object, and it is one of considerable importance, relates to the rule of discovering the principle, and pursuing in execution, the just mode of conveying instruction to those who are intrusted with the high charge of nursing the sick. A facility of executing this office is acquired in experience; its rules are improvable by observation. The superiority of attainment depends upon superiority of intellect, stimulated to exertion by natural kindness of disposition. The duty, in its best form, is taught by example rather than by precept. Where the physician is zealous, diligent and humane, the nurse frequently catches a portion of his spirit, executing her duty humanely, tenderly and assiduously—from her own internal motive of kindness rather than from external fear of punishment. It is customary to detail the duty of nurses formally—to exhibit the regulations for public inspection. The rule, though common, is not genuinely good. That which is written—exhibited simply for a

Principle of discipline for nurses and orderlies.

* See Table, N^o XI. at the end of this Chapter.

general and public inspection, makes a comparatively feeble impression. When the regulation is hung up upon the wall, the physician or chief of the hospital usually thinks that he has done his duty. The meaning may be good, but the practice does not comprehend the true mode of instruction. The example of the Spartan state, which instead of operating through written laws, attempted to train the members of its community practically in a rigorous and animated discipline, thereby forming a habit of good conduct, regular and steadfast in its course as if it depended on a primary law of nature, is deserving of imitation in all cases;—the utility of the rule applies most directly to the circumstances of those who assume the office of arranging the concerns of hospitals. Example produces, in this instance as in others, more good effect than written rule; for such is the power of imitation upon the human character that, if a physician be zealous and humane, the attendants upon the sick are generally animated with a similar spirit; if the physician be careless and indifferent, the nurse is usually lazy and unconcerned; if the physician be harsh and unfeeling, those who execute his will towards the sick are often severe and cruel.

Provision of
medicines.

The next, and the last point of importance comprehended under the head of medical arrangement, relates to the rule of selecting and

apportioning medicines and surgical means for the purposes of a given force, destined to act in a given field of service. It is plain, that till medical education become a national concern conducted systematically upon one basis throughout the whole extent of the empire, there can be no just expectation of uniform correspondence in the views of medical people in the treatment of diseases. Hence, as the views of medical people differ materially concerning the most proper methods of acting on this subject, it is not to be expected that the instruments or means, required by such persons for the accomplishment of views which are so different, should be exactly the same in all cases. The example is common, the contradictions conspicuous among practitioners both in military and civil life. The evils which arise from the operation of fluctuating opinions are embarrassing any where; they are severely felt in armies, for there uniformity of acting is a primary cause of good effect. But, besides the inconveniences and evils which necessarily arise from this source in a medical point of view, it is evident that the expence, entailed upon the public for a provision of means capable of answering all the variety of caprice which exists among practitioners so loosely educated, is enormous. If the provision be not made, the consequences are unsatisfactory, the effect sometimes miserable. The evil is serious; the source of it is evident. If the

medicinal stores, provided for the use of armies serving in foreign parts, be selected by persons who are not correctly acquainted with the professional opinions of the army surgeon, who is the person intrusted with the power of applying the remedy in the occasions of need, it is not unreasonable to suppose that some things will be omitted altogether which are useful in the surgeon's opinion, that others will be provided in superfluous or immoderate quantity which are of small value in his estimation; in short, that the provision made for the service will be defective, or, if correct, that it will be so only by chance. It happens rarely, according to the rule which has been followed of late years in the British service, that superfluity is not visible, or that defect is not complained of. This is the apparent fact; it is not maintained that the apparent is the real fact in all cases. It is possible that the apparent defect or superfluity is imputable to the ignorance of the surgeon—to the prejudices of his education, which do not permit him to employ the useful means, or which solicit him to demand those which are of no real value. This may be so in reality; but even the supposition in the case does not cover the whole of the error; for it is the duty of the chief medical officer, who superintends the medical concerns of the army generally, to be practically acquainted with the surgeon's opinion in all its extent. It unquestionably belongs to his office

to adjust the means according to the measure of the understanding of those who act. This, he cannot do without knowledge; and he cannot attain knowledge without employing some means of experiment by which he may acquire it. The fairest experiment in this case may be allowed to consist in the requisition of the brigade or regimental surgeon, who is supposed to form a correct estimate of medicines and surgical apparatus, judged by him to be necessary for the occasions of his brigade or regiment, during a given time, as destined to act in stations with which he is acquainted. Such requisition, presented by the brigade or regimental surgeon, is supposed to be subject to the control of the chief medical officer attached to the acting army; for he, as superintending the whole concerns of the medical department of that body, must hold himself responsible that every thing necessary for the uses of the troops be present in sufficient quantity, guarding, at the same time, against the opposite evil of incumbering the stores with things which are not necessary, and which, not being necessary, are reasonably deemed to be superfluous. If the requisition of the brigade or regimental surgeon be admitted and calculated upon as the basis of the supply of medicines and surgical means provided for an army destined for a given station, there would be little risk, and there would be no grounds for complaint on the head of deficiency;

and if there be no risk of want, there would be little danger of incumbrance from superfluity; for, it is understood to be a fundamental rule attached to the privilege of requisition granted to the surgeon, that the requisition be accompanied with a calculation of quantity, and reason assigned for the amount of the demand. It is only from actual knowledge of military service in all its conditions, supported expressly by a comparative view of effect drawn from authentic materials, viz. hospital returns of sick, digested accurately according to radical character of diseases, and continued progressively through a series of years in circumstances similar to those in question, that any thing approaching to an exact measure of means can be attained prospectively.—From a view of such materials, authentic in their nature and well considered in their reasons, a requisition may be supposed to be formed suitable in kind, even measured in quantity with tolerable exactness. The supposed requisition is specific. It only can be so from knowledge gained in experience. If the person forming the requisition, or rather ordering the supply, hath no adequate knowledge of military diseases in their real nature, as learned by actual experience in climates similar to those in which the scene of war is laid, defect or superfluity will be real—chargeable to the inexperience of those who direct, rather than to the ignorance of those who act. Where the chiefs of

the department have had no opportunities of learning by observation, it cannot be supposed that they will estimate scientifically and judge correctly—without the supposition of the secret power of that penetrating genius which is a rare occurrence in the lot of mankind. Hence it is reasonable to suppose, that some things will be provided in large quantity which are rarely or never used, some in small quantity for which there is a great demand, others, which are occasionally called for, not comprehended in the list: in such case, there is error in calculation, producing waste on one part, want and misery on the other.

If some part of the medicines selected for the use of troops in foreign countries do not prove suitable for the purposes of the service, they decay in store and finally perish with time; consequently they are wasted or lost. If others, suitable in their nature but not sufficient in quantity for the demands, cease to be found in the magazines, there occurs a want—with misery arising from want, unless the deficiency be supplied at a common market. Embarrassment is a necessary consequence; and its occurrence is not rare. An evil of some importance is implied in its effects: the remedy, which is fortunately neither difficult nor expensive, consists in allowing those persons, who are placed immediately in charge of the health of the troops, to demand a supply, specifi-

cally, of the means which their experience has informed them the occasions of the service are likely to require. The store-chest is to be equipped liberally and correctly in the first instance, the surgeon authorized to supply occasional wants at a market on the spot, wherever a market is to be found. The occasional supply is practicable in most countries to which war extends; for, as the theatre of war rarely lies in the uninhabited desert, and, as it is known that, wherever people are civilized and rich, the mercantile spirit flies with eagerness to supply the articles of luxury or necessity which the occasions of the rich demand—among others medicinal drugs and the various means required for the cure of diseases, the risk of disappointment on this head can scarcely be supposed to exist. If it be deemed secure in point of certainty to trust the occasional supply of common drugs to the chance of the common market, it is decidedly economical of public money to procure the supply at that source. Where a person purchases with ready money on the spot, he ordinarily purchases that only for which he has occasion; where supplies of drugs and other things, required for the uses of sick persons stationed in foreign parts, are furnished by contract, and selected by persons who have no correct knowledge of the needs, it would be matter of wonder if they were justly measured. It is reasonable to suppose, and it appears to be

the case in fact, that they are excessive in quantity in some points, deficient in others; upon the whole incorrect, or ill calculated for the purposes. As the mode of equipment now suggested is the most economical in expence, so it is presumed that the mode recommended for occasional supply will also be the most certain in effect. There is an innate principle in trade, as well as in the course of water, which seeks its level: the supply of common drugs, for the ordinary uses of the people, rarely fails in the common market of civilized countries. Civilized countries are subject to diseases, and they possess wealth: hence, the provision of medicines for the military, as the military forms but a small part in the mass of the people, may be safely trusted to the common chance: the essentials will generally be attainable in the case supposed; they are often deficient in the case existing. It is known to most persons, who have served of late years with the army in foreign parts, that the military magazines are often filled with drugs which are not wanted, that the hospitals are, at the same time, destitute of what is necessary for the purposes of the sick; or, if not destitute, that the wants are supplied occasionally at the nearest markets:—the examples are numerous.

The principle, which influences the movements of trade, is sufficient to ensure a supply of drugs

Surgical
means.

or medicines in the common market for the cure of common diseases—either in civil or military life. War is peculiar in its nature; it requires peculiar means and peculiar instruments; and, as its scene is fluctuating and changeable, its special needs are to be specially assured,—not left to the rule of trade, which does not act without evidence or strong presumption of advantage arising from its adventures. It is eager to supply wants; but it supplies them as a source of individual gain, not as a measure connected with the purposes of the state. Hence, surgical instruments, and such other means of surgical apparatus, as are necessary for the occasions of those who are engaged in war, are to be specially provided in the first instance, the supply and repair secured by a certain and independent channel of communication. It cannot be trusted to the rule which influences trade; for the want does not affect the mass of society, and it brings only a small and contingent gain. The means implied under this head, as the peculiar necessities of the surgical department of armies, are few in number. Surgical instruments, when good originally, are capable of being preserved in serviceable order at a small expence for a length of time; but, that they have the best chance of being so preserved, they ought to be the private property of the surgeon,—in the same manner as military arms are the property of the military officer.

Embarrassments are experienced on many occasions from the incumbrance of too much medicine, frequently from a load of what is superfluous and useless; misery and suffering are felt from defect of what is necessary on others. The evils, noticed in this place, proceed from the loose manner of acting adopted by the person who has assumed the direction in this branch of the medical department of the army. If we can be supposed to gain any acquaintance with causes through their effects, we are led to believe that medicines and surgical means were ordered in the late war on presumption, rather than with a specified purpose in view implying a correct calculation of the extent of the purpose, as founded on a knowledge of things attained in experience. As the manner appeared to be loose, so the expence, as not defined by any just rule, could not be otherwise than vague in its nature; it was great in amount. The expence of medicines, ordered for the consumption of the British army during the late war, must be known at the Treasury to be enormously great; and it is not easy for common spectators to discover the rule which influenced the calculation. The statements and amounts have a place in the army estimates; but it may be remarked, that a general statement of the quantity of medicines and surgical apparatus ordered for the uses of the army, or for a detachment of the army, with the amount of the general expenditure

Expenditure of medicines, &c.

during a given period of time, means nothing. It is necessary, in all cases of correct economy, to exhibit a view of the application of means to purpose, as well as to substantiate the actual provision of the means with the order of authority for such provision. It may be safely said that an exhibition of application to purpose was scarcely attempted in the late war. If not attempted there was error, and there may be cause to complain of negligence; but, in judging the conduct of those who superintend the medical concerns of the army in the present times, it is no more than fair to admit that a satisfactory form of exhibiting the expenditure of medicines for military sick is not easily contrived. It would be an endless labour to specify individually the purpose and application of every ounce or grain of medicine consumed in a large hospital. Such task would be troublesome in the extreme; and, after all the trouble, the result is liable to error on the head of exactness. It is candidly acknowledged that perfect accuracy is scarcely attainable in the present case; it is believed that some approaches may be made to it, without submitting to the tedious and embarrassing minuteness alluded to. The form of return * annexed to this work affords a considerable degree of precision, as much perhaps as can be attained in a subject so complicated in its

* See Table, N° XII. at the end of this Chapter.

nature. If the exhibition here presented be explained, the explanation corroborated by the inspection of sick returns, it may be fairly presumed that no great abuse in the expenditure of medicines and surgical means will pass undetected by those, who are competent to form judgment in the case; it must however be added, that it is only to men of experience of similar things that the power of forming judgment on the subject can be committed with propriety.

A calculation of the expence of means destined for public purposes is desirable at all times, for it implies knowledge of the subject. The existence of a rule of calculation, in estimating quantity and of judgment in selecting kind, may be considered as indispensable in apportioning the medicinal and surgical provisions of armies. If the rule of estimate be established on a general basis comprehending a multitude of parts, there will necessarily occur variety in detail according to the nature of the circumstances, the qualities of the climate, the conditions of the service, and the professional principles of the medical officers who are appointed to act, or to apply the means to the ends. Where medical officers adopt simple forms of prescription, bold and decisive at the same time in the mode of practice, disease is cut short in its beginnings—and with small expence. On the contrary, where the forms of prescription are

Estimate of
expence of
medicines,
&c.

complex, the mode of practice fashionable and feeble, the disease is allowed to complete its natural course;—drugs are consumed without the attainment of the end, which is the speedy extinction of disease by means of art. Such difference in the character of medical officers produces a difference in the expenditure of means; but the chiefs of the medical department of the army are supposed to be apprized of such differences existing in the character of their instruments, and to calculate accordingly. The amount of difference cannot be precisely defined; it will certainly prove considerable, but it may still be assumed that, notwithstanding all variety of circumstance and condition, the sum of one hundred pounds per annum will be found on trial to be an ample sum for the purpose of furnishing medicines and surgical apparatus for a battalion or regiment of one thousand men in times of war, in the actual service of the field in any climate where troops are destined to serve. A smaller sum will answer the purpose in times of peace, particularly in European countries. The sum here stated as necessary to cover the ordinary expences of medicines may be allowed to stand high, if an inference be drawn from what appeared to be customary in the British army previous to the late war. The regimental surgeon of former times, after furnishing every form of medicine required for the uses of the sick, was understood to pocket at least two thirds

of the allowance denominated medicine-money, granted for the avowed purpose of purchasing drugs and defraying the contingent medical expences of detached parties of the corps. This allowance varied according to the strength of the regiment. It stood at seventy pounds per annum at the lowest, one hundred and twenty at the highest. As two thirds of this allowance was supposed to form an addition to the surgeon's pay, which was otherwise a pittance inadequate to the decent support of an officer, the sum of one hundred pounds per annum for a corps of one thousand rank and file may be considered as ample to the full extent of the needs. That it is so may be inferred from the regulation now existing which adjudges sixpence per month, amounting to six shillings a year per man, to medical practitioners for medical attendance and medicines for such parties of soldiers as happen to be quartered in places where no military surgeon is stationed. If the care of the health of the troops be committed to such form of contract, the medical expences of a corps of one thousand men amount annually to no more than three hundred pounds. It may be fairly supposed that a sixth part of what is allowed in this case, actually defrays the expence of the drugs; the rest may be viewed as a consideration or price for labour;—and it is not a high one. The case adduced may be considered as a proof of the reasonableness or rather libera-

lity of the allowance proposed ; reference to the practice which obtains in countries where medical attendance and medicines are provided at the annual allowance of so much per head still farther confirms it. This practice obtains in the West Indies ; and it is believed that the sum allowed does not ordinarily exceed five shillings per man. It may be alleged that the rule does not apply exactly in this case, as the subjects are slaves in the one case, and soldiers in the other. This is true ; but it must be admitted notwithstanding this truth, that slaves require medicines of a similar nature with those required by soldiers : they frequently suffer from similar diseases ; and their masters, who have interest in the preservation of their lives, will take care that life is not lost or endangered for want of the useful drug. If these circumstances be fairly considered, and, if the practice of former times, supported by what now obtains in Great Britain with detached parties of soldiers, or, what is customary in the West Indies with proprietors of slaves, be admitted as just grounds of calculation, the sum, proposed in this place as equivalent to cover the expence of medicines, will be held sufficient for the provision of every necessary drug which the occasions of the sick can be supposed to demand. If this be so, and it may be considered as demonstrated in the examples adduced, it follows of course that, as one hundred pounds is sufficient to furnish medi-

cines, &c. for a battalion of one thousand men for the space of one year, so the sum of fifteen hundred pounds is sufficient for fulfilling the same purpose for a force of fifteen thousand men for a like period; and, calculating by the same rule, ten thousand pounds for an army of one hundred thousand. The sum here stated is supposed to be the common allowance for common service: if, to this be added the sum of fifty pounds per annum for every thousand men, as extra to answer the contingencies of war, which, by sometimes throwing sick or wounded out of the regimental channel into general hospitals, creates an extra expence, the total amount stands as follows, viz. four hundred and fifty pounds per annum for the ordinary and extraordinary cost of medicines and surgical means for a force of three thousand men; two thousand two hundred and fifty for a force of fifteen thousand; four thousand four hundred for a force of thirty-six thousand; and fifteen thousand for an army of one hundred thousand, acting in any scene of service either in native or foreign climates. It is presumed that every medical man, who is acquainted with military service, will be ready to allow that the sum proposed is ample for every purpose of need which can be expected to arise; yet it is prodigiously short of the cost of medicines and surgical equipments, consumed, at least provided for corresponding proportions of

the British army during the course of the late war. The difference may be ascertained by those who have authority to inspect the detail of the annual accounts of the apothecary general, either as relative to the whole of the army, or to any particular detachment destined to serve in foreign parts. A loose calculation is annexed in the notes,—not vouched to be precisely correct, but it is believed, on good grounds of information, not to be very remote from the truth *.

* See Note A.

Table, N^o V.

Forms of sick Tickets.

Intermitting Fever, single tertian

A. B.

Admitted	—	—	3 May
Commencement	—	—	1 ditto
Hour of invasion	—	—	11 A. M.
Course suspended	—	—	7
—by art—	—	—	
Half diet ward	—	—	9
Full diet	—	—	16
Discharged in the full vigour of health	—	—	20

C. D.

Remitting Fever, double tertian

Admitted	—	—	10 May
Commencement	—	—	9 ditto
Hour of invasion	—	—	4 P. M.
Crisis or termination	—	—	17 May
—natural—(copious perspiration)	—	—	
Half diet ward	—	—	20
Full diet	—	—	25
Discharged in full vigour of health	—	—	30

Continued Fever, with pneumonic Inflammation.

E. F.

Admitted	—	—	20 May
Commencement	—	—	19
Hour of attack	—	—	4 P. M.
Termination	—	—	21
—by art—	—	—	
Discharged cured in full vigour of health	—	—	23

G. H.

Contagious or Jail Fever.

Admitted	—	—	6 May
Commencement	—	—	5
Hour of attack	—	—	6 P. M.
Termination	—	—	7
—by art—(copious perspiration)	—	—	
Recurrence or relapse	—	—	12
Termination of crisis	—	—	13
Half diet	—	—	14
Full diet	—	—	17
Discharged in full vigour	—	—	20

I. K.

Admitted	—	—	10 May
Commencement	—	—	8
Hour of attack	—	—	4 P. M.
Decline	—	—	15
Recurrence of secondary symptoms	—	—	20
Relief	—	—	ditto
Half diet	—	—	23
Full diet	—	—	27
Discharged in health	—	—	30

L. M.

Dropsy, Anasarca.

Admitted	—	—	2 May
Commencement	—	—	10 April
Decline	—	—	15 May
—by art—	—	—	
Discharged in perfect health	—	—	3 June

Measles, malignant.

N. B. The lines printed in italic in the above Table are proposed in practice to be written in red ink.

Table, N^o VI.*Form of Hospital Return.*

Monthly Return of the Sick of Brigade, N^o I. from the 1st of May 1805, to the 31st inclusive.

			Movement.					Remarks.		
			Remained 1st May.	Admitted	Discharged.	Died	Remaining 1st June	Relapse.	Average Dura- tion of Dis- ease, or Days required for Cure.	
3000 Rank and File, total Strength of Brigade—Station supposed to be <i>Canterbury</i> —Mode of Accommodation, Barracks.	FEBRILE FORMS.	Intermitting — —	2	1	3	0	0	0	10	
		Remitting — —	3	2	4	0	1	1	12	
		Continued (simple) — —	2	3	4	0	1	0	7	
		Dysenteric — —	3	1	3	0	1	0	14	
		Pneumonic — —	2	5	7	0	0	0	5	
		Rheumatic — —	1	1	1	0	1	0	7	
		Catarrhal — —	2	3	4	0	1	0	5	
		Continued (malignant) Catarrhal malignant or influenza — —	1	2	2	1	0	0	7	
		Continued jail, ship or hospital fever — —	3	5	7	0	1	2	10	
		Small-pox — —	1	1	2	0	0	0	20	
		Measles — —	1	2	3	0	0	0	14	
		Scarlet — —	0	0	0	0	0	0	0	
		Erysipelatous — —	0	0	0	0	0	0	0	
		Organic Derangement.	Pulmonary consump- tion — —	1	0	0	0	1	0	0
			Asthma — —	0	0	0	0	0	0	0
Dropsy — —	1		0	1	0	0	0	36		
Jaundice — —	1		2	3	0	0	0	10		
Indigestion — —	1		1	2	0	0	0	15		
Scrofula — —	1		0	1	0	0	0	50		
Apoplexy — —	1		0	1	0	0	0	0		
Epilepsy — —	0	0	0	0	0	0	0			

N. B. Situation—low, surrounded by higher ground—Weather dry—Wind easterly—Mean heat at noon 46.

N. B. Situation—low, surrounded by higher ground—Weather dry—Wind easterly—Mean heat at noon 46.

Table, N° VI.—*Form of Hospital Returns, &c.*—continued.

3000 Rank and File, total Strength of Brigade—Station supposed to be <i>Canterbury</i> —Mode of Accommodation, Barracks.	Specification of Disease.	Movement.					Remarks.	
		Remained 1st May.	Admitted.	Discharged.	Died.	Remaining 1st June.	Relapse.	Average Duration of Disease, or Days required for Cure.
Wounds— Accidents.	Wounds simple —	3	3	4	0	2	0	20
	— — compound —	1	2	1	0	0	0	60
	Dislocations —	1	1	2	0	0	0	20
	Fractures —	1	2	1	0	2	0	60
	Abscess —	1	0	1	0	0	0	20
	Ulcer —	1	3	1	0	3	0	30
Infections by Contact.	Syphilis —	2	3	2	0	3	0	60
	Gonorrhœa —	1	6	7	0	0	0	10
	Lepra —	0	0	0	0	0	0	0
	Yaws —	0	0	0	0	0	0	0
Inabilities by reason of	Loss of limbs —	1	2	0	0	3	0	0
	— sight —	0	0	0	0	0	0	0
	— hearing —	0	0	0	0	0	0	0
	Old age —	0	0	0	0	0	0	0
Total		39	51	67	1	22	3	21

N. B. Situation—low, surrounded by higher ground—Weather dry—Wind easterly—Mean heat at noon 46.

Note.—This constitutes the simple form of return, as comprising troops of one description or denomination occupying one station. The compound return comprises a number of simple returns, and is capable of being extended from one district to a kingdom, and comparatively to different kingdoms and different armies.

Table, N° VII.

Form of compound sick Return.

Monthly Return of the Sick of District, N° I. from the 1st of May 1805, to the 31st inclusive, in its various Stations.

3000 Rank and File—total Strength of the Brigade.—Station, *Centerville*.—Mode of Accommodation, Barracks.

Disease.										Disease.										Disease.										Disease.									
Movement.										Movement.										Movement.										Movement.									
Remarks.										Remarks.										Remarks.										Remarks.									
Remained 1st May.	Admitted.	Discharged.	Died.	Remaining 31st May.	Relapsed.	Average Duration Days.	Remained 1st May.	Admitted.	Discharged.	Died.	Remaining 31st May.	Relapsed.	Average Duration Days.	Remained 1st May.	Admitted.	Discharged.	Died.	Remaining 31st May.	Relapsed.	Average Duration Days.	Remained 1st May.	Admitted.	Discharged.	Died.	Remaining 31st May.	Relapsed.	Average Duration Days.	Remained 1st May.	Admitted.	Discharged.	Died.	Remaining 31st May.	Relapsed.	Average Duration Days.	Remained 1st May.	Admitted.	Discharged.	Died.	
Febrile Forms.										Febrile Forms.										Febrile Forms.										Febrile Forms.									
Intermittent.	2	1	0	0	0	10	1	0	1	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Remitting.	3	3	4	0	0	12	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Continued (simple).	2	3	0	0	0	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Dysenteric.	3	1	0	0	0	14	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pneumonic.	2	2	0	0	0	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Rheumatic.	1	1	0	0	0	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Catarrhal.	2	3	4	0	0	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Organic Derangement.										Organic Derangement.										Organic Derangement.										Organic Derangement.									
Continued malignant.	1	0	0	0	0	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Catarrhal malignant.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Continued jail, hospital or ship fever.	3	0	0	0	0	10	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Scarlet.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Erysipelatous.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Small-pox.	1	1	0	0	0	20	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Measles.	1	2	3	0	0	14	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Wounds and Accidents.										Wounds and Accidents.										Wounds and Accidents.										Wounds and Accidents.									
Wounds (simple).	3	3	4	0	0	20	1	3	4	0	0	0	20	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Dislocation.	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fracture.	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Abscess.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Ulcer.	1	3	1	0	0	30	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Infections from Contact.										Infections from Contact.										Infections from Contact.										Infections from Contact.									
Syphilis.	2	0	0	0	0	60	0	0	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Gonorrhoea.	1	0	0	0	0	10	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Leprosy.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Yaws.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Inability by reason of.										Inability by reason of.										Inability by reason of.										Inability by reason of.									
Loss of limbs.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
— sight.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
— hearing.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Old age.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total.	39	51	67	1	23	3	43	33	55	1	20	2	21	20	13	28	0	5	0	21	102	97	150	2	47	5	21	102	97	150	2	47	5	21	102	97	150		

3000 Rank and File—total Strength of the Brigade.—Station, *Dexter*.—Mode of Accommodation, Barracks.

Disease.										Disease.										Disease.										Disease.									
Movement.										Movement.										Movement.										Movement.									
Remarks.										Remarks.										Remarks.										Remarks.									
Remained 1st May.	Admitted.	Discharged.	Died.	Remaining 31st May.	Relapsed.	Average Duration Days.	Remained 1st May.	Admitted.	Discharged.	Died.	Remaining 31st May.	Relapsed.	Average Duration Days.	Remained 1st May.	Admitted.	Discharged.	Died.	Remaining 31st May.	Relapsed.	Average Duration Days.	Remained 1st May.	Admitted.	Discharged.	Died.	Remaining 31st May.	Relapsed.	Average Duration Days.	Remained 1st May.	Admitted.	Discharged.	Died.	Remaining 31st May.	Relapsed.	Average Duration Days.	Remained 1st May.	Admitted.	Discharged.	Died.	
Febrile Forms.										Febrile Forms.										Febrile Forms.										Febrile Forms.									
Intermittent.</																																							

Note.—The district return comprises all the points in the district; a given number of district returns, condensed and arranged, form the return for the kingdom; the condensed return of the sick of the military force within one kingdom furnishes the means of making a comparative estimate with the returns of any number of kingdoms, or colonies.

VIII.

ly, for the

nd Ireland, Stations.

Returns—England.		ent.	Remarks.		
			Relapsed.	Average Duration.	
Returns—Ireland.	Remained 1st May Died.	Remaining 31st May.	Relapsed.	Average Duration. Days.	Situations as in Returns of Station.
	2	0	25	3	
	1	0	28	30	12
	3	0	31	0	7
	2	0	29	0	14
	6	0	15	0	5
	0	22	0	7	Wind easterly.
	0	31	0	5	

Force in the domestic

East and West Indies sep inclusive, digested and condensed
Districts, Posts or Stations

Remarks.	General Movement.					General Remarks.
	Relapsed.	Average Duration.	Admitted.	Discharged.	Died.	
	Days.					
	10		270	365	12	127
	12		405	534	23	213
	7		338	433	2	248
	7		300	250	10	140
	14		276	290	12	137
	5		165	256	20	15

{ Filed Returns).	{ Mean heat 90. Weather dry.	General Movement.					General Remarks.
		Remained.	Admitted.	Discharged.	Died.	Remaining 31st May.	
		Days.					
		Relapsed.	Average Duration.	Admitted.	Discharged.	Died.	Remaining 31st May.
		Days.					
		10		270	365	12	127
		12		405	534	23	213
		7		338	433	2	248
		7		300	250	10	140
		14		276	290	12	137
		5		165	256	20	15

Mean heat 90.
Weather dry.
Relapsed Returns).

Comparative monthly returns of the sick of the military

Month	1861		1862		1863		1864		1865		1866		1867		1868		1869		1870		1871		1872		1873		1874		1875		1876		1877		1878		1879		1880		1881		1882		1883		1884		1885		1886		1887		1888		1889		1890		1891		1892		1893		1894		1895		1896		1897		1898		1899		1900		1901		1902		1903		1904		1905		1906		1907		1908		1909		1910		1911		1912		1913		1914		1915		1916		1917		1918		1919		1920		1921		1922		1923		1924		1925		1926		1927		1928		1929		1930		1931		1932		1933		1934		1935		1936		1937		1938		1939		1940		1941		1942		1943		1944		1945		1946		1947		1948		1949		1950		1951		1952		1953		1954		1955		1956		1957		1958		1959		1960		1961		1962		1963		1964		1965		1966		1967		1968		1969		1970		1971		1972		1973		1974		1975		1976		1977		1978		1979		1980		1981		1982		1983		1984		1985		1986		1987		1988		1989		1990		1991		1992		1993		1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040		2041		2042		2043		2044		2045		2046		2047		2048		2049		2050		2051		2052		2053		2054		2055		2056		2057		2058		2059		2060		2061		2062		2063		2064		2065		2066		2067		2068		2069		2070		2071		2072		2073		2074		2075		2076		2077		2078		2079		2080		2081		2082		2083		2084		2085		2086		2087		2088		2089		2090		2091		2092		2093		2094		2095		2096		2097		2098		2099		2100		2101		2102		2103		2104		2105		2106		2107		2108		2109		2110		2111		2112		2113		2114		2115		2116		2117		2118		2119		2120		2121		2122		2123		2124		2125		2126		2127		2128		2129		2130		2131		2132		2133		2134		2135		2136		2137		2138		2139		2140		2141		2142		2143		2144		2145		2146		2147		2148		2149		2150		2151		2152		2153		2154		2155		2156		2157		2158		2159		2160		2161		2162		2163		2164		2165		2166		2167		2168		2169		2170		2171		2172		2173		2174		2175		2176		2177		2178		2179		2180		2181		2182		2183		2184		2185		2186		2187		2188		2189		2190		2191		2192		2193		2194		2195		2196		2197		2198		2199		2200		2201		2202		2203		2204		2205		2206		2207		2208		2209		2210		2211		2212		2213		2214		2215		2216		2217		2218		2219		2220		2221		2222		2223		2224		2225		2226		2227		2228		2229		2230		2231		2232		2233		2234		2235		2236		2237		2238		2239		2240		2241		2242		2243		2244		2245		2246		2247		2248		2249		2250		2251		2252		2253		2254		2255		2256		2257		2258		2259		2260		2261		2262		2263		2264		2265		2266		2267		2268		2269		2270		2271		2272		2273		2274		2275		2276		2277		2278		2279		2280		2281		2282		2283		2284		2285		2286		2287		2288		2289		2290		2291		2292		2293		2294		2295		2296		2297		2298		2299		2300		2301		2302		2303		2304		2305		2306		2307		2308		2309		2310		2311		2312		2313		2314		2315	
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Table, N^o X.

Monthly Sick Return, comprising Hospital and other Casualties in a given military Force from the 1st of May 1805 to the 31st inclusive, exhibited numerically by Battalions, Regiments or Brigades.

Name or Number of the Corps.	Total Strength 1st May.	State	Hospital Movement and Casualty.				State	Economical Movement, comprising the Casualties of War and other Causes.								Total Strength 31st May.
		Remained ineffective or sick 1st May.	Admitted on the sick List.	Discharged to Duty cured.	Died.	Remaining ineffective or sick 31st May.	Killed in Action.	Transferred to the Veteran or other Battalion.	Discharged from the Service as unfit for military Duty.	Deserted.	Received in Transfer.	Received as Recruits.				
1st Batt. or Reg.	1000	20	10	15	0	15	3	2	1	1	2	6	0	1001		
2d Reg. or Brigade	3000	60	30	50	0	40	10	0	0	0	0	20	0	3010		
3d Reg. or Brigade	3000	50	60	40	1	69	30	6	3	0	6	40	0	3006		
4th Reg. or Brigade	3000	80	40	60	3	57	0	0	0	0	0	50	0	3047		
5th Reg. or Brigade	3000	90	50	70	4	66	0	0	0	0	0	0	0	2996		
6th Reg. or Brigade	3000	100	70	90	2	78	5	3	10	1	2	60	0	3041		
Total	16000	400	260	325	0	10325	48	11	14	2	10	176	0	16101		

The returns of the preceding Tables exhibit the specification of diseases, and the casualties which arise from the effects of disease in any given military force considered as a whole: the present exhibits the movement and casualties numerically by regiments or brigades. It is added in this place as an explanatory appendage to the others, it not being possible to connect, in systematic order, the specification of diseases and their effects with relative numbers in a variety of different corps.

Table, N° XI.

A comparative Estimate of the Expences of Nurses and Orderlies or Attendants upon Sick, according to the Arrangement proposed, and the Rule acted upon in British military Hospitals.

PLAN PROPOSED.						PRACTICE EXISTING.			<i>Annual Difference of the two Plans.</i>
Military Force.	Hospital List.	Nurses and Orderlies.	Rate of Pay and Cost of Provisions per Day each.	Daily Amount of Pay and Cost of Provisions.	Annual Amount ditto.	Nurses and Orderlies.	Daily Amount of Pay and Cost of Provisions.	Annual Amount of Pay and Cost of Provision	
			s.	£.	£.		£. s.	£.	£.
3000	160	10	2	1	365	16	1 12	584	219
15,000	800	50	2	5	1825	80	8 0	2920	1095
30,000	1600	100	2	10	3650	160	16 0	5840	2190

Note.—It is stated at length in the body of this work, that the allotment of nurses and attendants upon such sick persons as require careful nursing is nearly double, according to the arrangement proposed, and that which is customary in military hospitals in the British service; it is at the same time seen by the Table now exhibited that the amount of the expence is less by one third at least; an effect arising from the manner of disposition as allotting service only where it is necessary.

Table, N^o XII. comprising the Mode of exhibiting the Expenditure of Medicines, &c. for the Purposes of sick Persons.

Monthly Return of the Expenditure of Medicines and surgical Means, from the 1st May 1805 to the 31st inclusive, for the 1st Regiment-- Station in Barracks at

Medicines employed.	Quantity.	Cost or Value.	Means employed.	Quantity.	Cost or Value.	10 Persons cured of Itch.	Itch Ointment.	Total Value.
Acid. vitriolic.	—	—	—	—	—	—	—	—
Alumin. rup.	—	—	—	—	—	—	—	—
Ammon. præparat.	—	—	—	—	—	—	—	—
Antimon. tartarisat.	—	—	—	—	—	—	—	—
Calomel. præpar.	—	—	—	—	—	—	—	—
Camphor.	—	—	—	—	—	—	—	—
Ceruss. acetat.	—	—	—	—	—	—	—	—
Confect. opiat.	—	—	—	—	—	—	—	—
Cort. Peruvian.	—	—	—	—	—	—	—	—
Crem. tartar.	—	—	—	—	—	—	—	—
Emplast. cantharid.	—	—	—	—	—	—	—	—
Extract. colocynth. comp.	—	—	—	—	—	—	—	—
Ferr. vitriolat.	—	—	—	—	—	—	—	—
Fior. chamom. pulv.	—	—	—	—	—	—	—	—
G. arabic.	—	—	—	—	—	—	—	—
Kali præparat.	—	—	—	—	—	—	—	—
Pulv. digital.	—	—	—	—	—	—	—	—
— ipecac. comp.	—	—	—	—	—	—	—	—
— ipecac. simp.	—	—	—	—	—	—	—	—
— jalap.	—	—	—	—	—	—	—	—
— rhubarb.	—	—	—	—	—	—	—	—
Tinct. opii	—	—	—	—	—	—	—	—
Pulv. antimom. (Jacob.)	—	—	—	—	—	—	—	—
Zinc. vitriol.	—	—	—	—	—	—	—	—
Spirit. æth. vitriol.	—	—	—	—	—	—	—	—
100 Daily average Number of medical Subjects in Hospitals. —								
60 sick. — 40 convalescent.								
60 Daily average Number of surgical Subjects — 40 ill — 20 recovering.								
Means employed.								
Argent. nitrat. —								
Cerat. lap. calam. —								
Ceruss. acetat. —								
Hydrag. nitr. rubr. —								
Liniment. sup comp. —								
Ol. terebinth. —								
Fine lint —								
— tow —								
Plaster on linen (10 yards) —								
Bougies (6) —								
Sponges (2) —								
10 Persons cured of Itch.								
170 Total Hospital Subjects—including Itch.								
Total Value.								
lb. oz. £. s. d.								
2 0 0 2 0								
£. 3 6 4								

Note. The above form of table furnishes a rule for estimating the expenditure of medicines and surgical means in general or regimental hospitals, with as much correctness perhaps as the nature of the thing admits. The account of the expenditure is authenticated by reference to the daily returns of the sick as the final voucher:—loss and damage where either occur, are to be proved by regular survey and certificate of an authorized officer or board of officers:—It is not to be supposed that there is a correct calculation of quantity or price in the present exhibition:—the table is constructed and the detail followed out merely for the sake of exhibiting a form for the instruction of the younger class of surgeons.

Table, N° XIII.

Comparative Estimate of Expence of Medicines and surgical Means provided for the Purpose of Troops destined to serve in foreign Stations according to the Plan proposed and that which was acted upon in the late War.

PLAN PROPOSED.				EXAMPLE OF 1795, WEST INDIES.		Supposed Difference of Cost.
Number of Troops.	Common Allow- ance.	Extra Al- lowance.	Total Amount.	Gross Weight of Medicines.	Supposed Value.	
1000	£. 100	£. 50	£. 150			
3000	300	150	450			
15,000	1500	750	2250			
21,000	2100	1050	3150			
36,000	3600	1800	5400	354 Tons.	£. 100,000	£. 94,600
The number pro- vided for in 1795 in the expedi- tions to the West Indies.						

Note.—The author is sorry he has it not in his power to bring forward a precise example of estimate for the expence of medicines and surgical means in two distinct cases, exhibiting a demonstrative comparison of the plan of equipment followed and that now proposed. The amount of the bills of the apothecary general, for the cost of the medicines sent to the West Indies in the year 1795, is known to him only by report. It was said, and he has reason to think truly, for the authority is respectable, that the amount of the bill for medicines in the year 1795 was somewhere about 150,000*l*. It is known very generally that the force, employed on the expeditions to the West Indies in the year 1795, comprized more than two thirds of the force serving in foreign stations at that time, and furnished with medicines at the army elaboratory or apothecary-general's store. The quantity is stated officially to have been 354 tons; and, this being so, he believes he will not exceed the truth in laying the cost of 354 tons of stores of this description at 100,000*l*. It is further reported by those who have made inquiry into the case, that the average cost of army medicines exceeded 70,000*l*. per annum, during the greater part of the late war: no person who understands the subject rightly will be found to say that the annual wants could justly demand an expence of ten thousand pounds for war and foreign service. There is thus an evident error in calculation, but, if the supply of drugs was calculated thus loosely, the provision of the surgical means does not seem to have been estimated by a juster rule. Surgical instruments in particular appear in the list of stores in such superfluous number, as if the probabilities were that every soldier on the destined service would have to undergo one of the greater operations of surgery. The consequence of this profusion was that the drugs rotted or decayed in store, and the instruments were eaten up by rust, so as to be unserviceable. If the medicinal provisions of the year 1795 be compared with the invoice of the regimental chest of the present time, we shall find that as much medicine by weight was then provided for five men as is now allowed for five hundred.—It will be hard to prove that both cases are right—See invoice of the regimental chest in the hospital regulations.

N O T E S

OF

ILLUSTRATION, PROOF, AND APPLICATION.

CHAPTER III.

A. §. THERE is no part of the medical department of the British army which calls more imperiously for investigation, than that which relates to the selection and supply of medicines and surgical means provided for the use of troops serving in foreign parts. It is difficult to seize and estimate justly the principle of the rule which influences the conduct of the army medical board on this head. The physician-general must be supposed, from the nature of his office, to be the person who estimates and arranges the supply of medicinal stores. Medicines are the physician's arms; and the physician-general equips the ordinary physician for the combat. As the right of selection lies in his province, it must consequently be understood that he selects the most suitable in kind, and that he estimates the quantity required for the purposes of a given service with precision. This he is believed to do from his knowledge of the needs; and that knowledge he is believed to have gained by personal experience of the treatment of such diseases as are peculiar to the country, in which the scene of war lies, aided

in his task by the informations and requisitions of the regimental surgeons who are acting on the spot, and who are the persons to whose care the health of the military body is committed in all its extent—medically as well as surgically. As this office belongs ostensibly to the physician-general in virtue of his official appointment; so the selection and estimate of quantity of surgical means, required by the regimental surgeon for surgical purposes, must be supposed, on similar grounds of reasoning, to belong to the surgeon-general, who is chief in the surgical department of the army. Such boundaries of duty as those now noticed may seem to be implied in the obvious interpretation of the letter of commission of physician and surgeon general; and being so, it might have been expected that the execution of the duties would have been preserved distinct and separate throughout. This is not the case: the surgeon-general, in consequence of some private arrangement, the grounds of which are not known to the author, stands forward as the acting person in both cases, exercising the power of direction in all matters which relate to general hospitals and foreign service, whether these be in the province of the professed physician or regular surgeon. This is the fact:—a few historical notices are added, explanatory of the manner in which requisitions are executed, and medicines supplied for the troops serving in foreign stations.

It is commonly known that the British army suffered greatly from sickness in its retreat through Holland, in the year 1794 and 1795. As the sickness was great, it may be reasonably supposed that there was a great demand for medicines. The disease was principally of one character, so that the articles of medicine most commonly

employed in that disease were soon exhausted. The wants were supplied occasionally at the neighbouring markets, viz. Amsterdam, Utrecht or Bremen; but there still existed complaints, and the sick suffered hardships. The author of this work was placed on the hospital staff in the spring 1795, and assumed the direction of the hospital department in the May following. As he considered it to be a preliminary step in entering upon his office, to obtain correct information of the means which were placed in his hands for the execution of his official duties, he directed an inventory to be made of the medicinal stores and surgical means which then existed. Some few drugs, such as are commonly employed in the cure of the disease which had principally prevailed among the troops, were not found in the list. Bating this deficiency, and it extended only to a few of the more common articles, medicines and surgical means abounded in great quantity;—in such quantity, indeed, as might be supposed on good grounds of calculation to be sufficient for the force then remaining on the continent—for the space of five or six years at least. The materials, scattered and dispersed in various places, were collected, arranged in order and inventoried. A copy of the inventory was transmitted to England for the information of the members of the army medical board; a requisition, of what was wanting to complete the stores for the purposes of the service for a given time, was added. The receipt of the inventory was not acknowledged; nor was an answer returned to the letter, enclosing the requisition for supply at the time the author left the continent for another destination of service. The requisition alluded to was specific: it was expected that the specified requisition would have been executed promptly and correctly.

This was not done: a division of medicines, assorted as if nothing had actually existed, was sent out some time thereafter; the amount so ill measured, that the expence of carriage, by land from Cuxhaven to Bremen, called for a larger sum of money than would have purchased, on the spot, every thing that was wanting to complete the stores, in such manner as to be prepared to meet the demands of the army surgeons, and to supply the ordinary consumption of the hospitals in all points—for twelve months or more. This is one distinct fact: it furnishes proof that the neglect of attending to a specific requisition produced unnecessary expence in the first instance, and entailed considerable inconvenience on the army afterwards by the incumbrance of a load of useless or superfluous things: it has many analogous illustrations.

It appears by official documents, laid before the House of Commons in the year 1796, that the gross weight of medicines sent out to the West Indies in the year 1795, calculated apparently for the occasions of a force of thirty-five thousand men, amounted to the enormous quantity of three hundred and fifty-four tons. This immense provision was divided between the Charibean islands and the island of St. Domingo. Additional supplies were sent out annually. It will not be maintained that they corresponded correctly with the requisitions, or it will not be supposed that the requisitions were made on well-calculated grounds, when it is known that there was sometimes a necessity of purchasing, on the spot, such articles of medicine as were absolutely wanted for exigent service. This, the author knows to have been the case in St. Domingo at the time that the storehouses were filled

with a superfluity of drugs. The accumulation went on to increase progressively, and it increased rapidly, inso-much that when the island was abandoned in the year 1798, the amount of medicines and surgical apparatus, remaining unexpended, was found to be an enormous incumbrance. These might be considered as lost; for being sent to Jamaica and sold at vendue, the author has been informed, and he has reason to think correctly, that the money arising from the sale was nearly consumed in paying the wharfage, and defraying the other contingent expences of the sale. This may not be correct; but the precise truth may be known by reference to the accounts of the commissary-general.—Such was the fate of the residue of the immense provision of medicines, &c. sent out to St. Domingo in the year 1795; the fate of the Charibean division was somewhat similar. As it appeared by official returns that useless medicines had accumulated to a great amount in the Charibean islands in the course of a short period, a person was dispatched from England before the close of the war, expressly for the purpose of inspecting their condition and of adopting measures to disembarrass the storehouses of what was useless, as gone into decay, superabundant in quantity, as not corresponding with the needs, or superfluous in nature, as not suitable to the purposes of the service. The measure adopted in remedy proves to demonstration the existence of an evil, arising from the operation of a fundamental error. Profusion is demonstrative in the case adduced; a similar profusion, viz. an inundation of useless things, with occasional want of the needful, appears to have taken place in every quarter where troops were stationed and in which hospital stores were deposited in the course of the late war. If the truth of the

assertion be doubted, the proof or refutation is to be found in the returns of medicines and hospital stores transmitted from the different garrisons abroad, particularly from the West Indies during a course of past years. It is presumed it will appear from a view of these returns, that useful things provided in small or in moderate quantity were soon exhausted, consequently deficient in many cases; that others more abundantly supplied, but not of the same utility, were left to decay and perish in store, as not being wanted in a proportion corresponding with the quantity existing. If this supposition be proved in trial, there exists an error of obvious and great importance, both as respecting the waste of money, and the disappointment in medical effect arising from deficiency of means. Whatever be the real truth of the case, the appearances justify, or rather call for investigation. If the chief medical officer, appointed to act with troops in foreign service, ignorant or neglectful of his duty, forget to transmit a precise and correct statement of the medicines and stores which are left in his possession at a given time; or, if he do not form a just calculation of his probable wants, as unacquainted with the ordinary course of things in the scene where he acts, or unapprized of the nature of the service in which he may be employed, the chiefs of the department who reside at home, and who are supposed to act in correspondence with the information of the official reports transmitted from abroad, may be acquitted of blame if they err in the measure of supplies which are ordered for foreign parts. On the contrary, if, furnished with all the requisite informations on the subject, they persist in sending out things in large quantity which are rarely or never used, admitting into the supply only a small quantity of

those things of which there is a daily consumption, the blame and the consequences following it, which are want on one hand and waste on the other, belong wholly to themselves. The amount of the error is great in matter of expence: a remedy exists which is easy in practice, and direct to the purpose in its effect. The evil of profusion, which is so ruinous to the finances of the country, would not exist in any extent, if the requisitions, made by those who know the wants precisely, were executed correctly according to the measure of the demand; or, if those, intrusted with the responsibility of managing the concerns of the health of the troops employed on foreign service, were authorized to purchase on the spot such things as are actually required for the contingent needs, acquitted for so doing in exhibiting a detail of the expenditure in a tabular form according to the example annexed, illustrated and verified by reference to specific returns of sick under treatment during a given period of time. It ought to be remembered in this case, that the mode of purchase on the spot is the simplest, the most economical and the most certain, where the station of the troops or the scene of the war is laid in a civilized country. It is economical; because, though the money-price be actually high, no more is purchased than what is wanted. It is sure, because medicines and other means which are wanted for the cure of the diseases of the community are rarely found to fail in the market, where the people possess wealth. This depends on a radical rule in trade; and on that account it may be safely trusted. It was an ignorance of this rule, or the operation of some unknown cause which produced the enormous supply of medicines and hospital stores for the use of the expeditions which sailed for the West

Indies in the year 1795. The gross amount of the tonnage has been published officially; the amount of the cost is known to the author only by report. The bill of the apothecary-general, for the year 1795, is said to have been no less than one hundred and fifty thousand pounds. If two thirds of that sum be allowed for the equipment of the expeditions to the Charibean islands and St. Domingo, the difference of what was the case, and what ought to have been the case, is so wide as scarcely to appear credible. It is a point, which will not be disputed by any one who possesses knowledge of common things, that one hundred pounds per annum is an ample allowance for the purchase of medicines for a corps of one thousand men; consequently the sum of three thousand five hundred pounds is the allowed sum for an army of thirty-five thousand, the amount of the force prepared to serve in the West Indies at the time mentioned. If to this be added one thousand seven hundred and fifty pounds, at the rate of fifty pounds for every thousand men, as an extra allowance for the contingencies of war, which sometimes throw sick and wounded out of the regimental channel, the total sum amounts to five thousand two hundred and fifty pounds. This, it is confidently maintained, is sufficient for every useful purpose if the means be selected with judgment; yet it probably amounts to little more than one twentieth part of what was provided on the same account in the year 1795. The author, not having had the opportunity of inspecting the bills of the apothecary-general, speaks of probabilities only. He does not pretend to be correct in his calculation on this subject; but, he believes that he is warranted in adding, that whatever be the precise fact, the difference of the two cases is obviously so great, that it can scarcely

fail to strike the attention of those who arrange the money concerns of the nation.—It might seem a fable, if there were not evidence of truth on record.—The fact is ascertained by the faith of official documents that the gross weight of the medicines, shipped for the West Indies in the year 1795, amounted to three hundred and fifty-four tons: those persons, who were intrusted with the power of applying this immense mass of means, will scarcely be able to furnish vouchers, shewing that one part in ten was applied to an useful purpose.

The excessive expenditure, or rather the excessive provision of medicines and surgical means alluded to in this place, relates chiefly to the expenditure, or rather to the waste and misapplication of medicines, &c. as appearing under the head of general hospitals and foreign service. The regimental allowance, as apportioned for corps serving in Great Britain, is not excessive in the present times*. It is calculated by a small scale; it may even be thought by some to be curtailed below a just measure. It will not be judged to be sufficient in quantity to meet the occasions of general sickness; and it is probable it will not be considered as comprehending all that variety in kind, which certain conditions of disease sometimes require. Simplicity is desirable in most things, for it is nearest to the rule of nature; it is desirable in medical practice every where, and it is indispensable in military service; but indispensable as it is in this case, it is sometimes injurious in effect that the medical views of army surgeons be limited in the application of means by the dictate of those who do not see the occasions, and, who

Regimental
supply.

* See invoice of a regimental medicine chest, Regulations for Hospitals.

not seeing, cannot be supposed to judge correctly of the needs. As actual inspection is essential to the forming of correct judgment in most cases, it would be well that a discretionary latitude were left open to the requisitions of the regimental surgeon on the head of medicine. The regimental surgeon is the person responsible for the medical effect; he cannot therefore be stinted in his means with propriety. It is a fundamental maxim in true economy, that, while there is no waste of the cheapest drug in the circle of the *materia medica*; so no one is to be considered as expensive, which has a fair chance of contributing to save the life of a sick soldier, or even to shorten the period of his indisposition.

Reference
to other
powers or
former
times.

In forming a just estimate of the expences, necessarily incurred on account of medicines and surgical means for the purposes of armies in times of peace or war, it might be useful to take a view of the matter as managed by the principal powers on the continent. The most eminent of the warlike powers on the continent appear to arrange the various parts of the medical department of their armies, according to rules of just calculation. Whether or not the chiefs of the medical department of the British army are acquainted with the medical arrangements of foreign nations, the author does not pretend to know; but he cannot avoid seeing that no part of their economy is adopted in practice in the equipments of general hospitals. The example is distant in place, and may not be known: the items of expenditure are also calculated with a minuteness, which may probably be despised by a rich nation,—for calculation savours of penury. But be this as it may, the example of the American war is not remote in time so as to be forgotten; and, as it belongs to

ourselves, it may be brought forward for comparison without degradation. If a comparison be made of means and purpose in the American and late war, it will be seen how the case stands. The means are found in the bills of the apothecary-general, the purpose is expressed in the return of troops employed in foreign service. The comparison, it is to be observed, lies in this case only between the amount of medicines ordered for the use of hospitals and foreign stations; for it must be remembered that the regimental surgeon, in the time of the American war, furnished his own medicines and surgical means with the allotted fund, unless where his corps was actually in the field or destined for the campaign; in which case he usually received gratuitous supplies of the necessary drugs. It is very well known that the store of medicines, at the head quarters of the American army, abounded with every necessary thing for the use of sick troops; it may even be thought by persons who calculate minutely that there was superfluity in many respects; yet the difference of quantity in that and in the present instance will be found to be great, the difference of expence enormous. Common observation presents this inference; a reference to official documents will, it is believed, prove it incontestably.

That the quantity of medicines provided for the uses of troops serving in foreign parts is excessive must be considered as a demonstrated truth; for it is seen daily that a great part of the provision perishes in store without being applied to a purpose. As the quantity is visibly excessive; so it may, in some cases, be doubted if the quality be of the highest virtue. It is not ascertained by a rigid official test that army medicines are uniformly

Quality of
drugs.

the best of the market.—The faith of the contractor is more to be relied upon than the professional examination of the physician-general, who would be required to spend too much of his time in the laboratory were he to ascertain rigidly that every thing was genuine in its kind. It is necessary to be mentioned in this place, as it may not be commonly known, that a person, denominated apothecary-general, possesses a patent for the purpose of supplying the British army with medicinal stores. This person has the power, or he has assumed the privilege of dividing the business of the patent with another; consequently it may be said that the army is supplied with medicines by contract at second hand. It is commonly acknowledged to be an implied rule in all business of contract to study what is cheapest, rather than what is best; the health and interest of the army are thus exposed to danger by the operation of the law which usually manifests itself in the execution of contract. It is admitted that a contract for medicines, as medicines are means which concern human life, is a sacred contract: it is also known that there is a love of gain which influences man's conduct powerfully, even in the most sacred contracts. Gains are augmented by lowering quality where price is fixed; it may hence be inferred, and the contrary cannot be proved, that contracts for army medicines are liable, as well as for other things, to the operation of this paramount cause. The subject is delicate; but it is important that it be well understood. It is a duty to doubt,—to be suspicious, and to examine rigidly, where a discovery of truth is so essential to effect, the path of investigation so intricate, and the means of tracing it so obscure. It is merely hinted on the question now under consideration, that there are not wanting

army practitioners, who believe themselves warranted in saying that army medicines are not always of an equal quality with those which are procured at Apothecaries Hall; whether decayed by time, debased by adulteration, or of a quality originally inferior in their nature, is not positively stated. But, whatever the case or cause of the difference may be, it is admitted, that, if medicines be of a quality inferior to what is calculated upon as producing a precise effect, the views of the physician are disappointed, and the life of man is probably sacrificed to a faulty drug. This may happen as the case now stands. It is evident that a door is opened to a serious evil in the operations of private contract; it would be barred in some degree by the adoption of the following arrangement: If no articles of medicine or drug were admitted into the hospital stores or army surgeon's chest, which are not direct from Apothecaries Hall, certified by the corporate seal, which is considered as equivalent to an oath, the effect of the drug would be calculable by one rule, as every thing which is issued from this depot is supposed, or rather vouched to be of a standard virtue. It may be remarked in this place that the corporate body of apothecaries is ostensible in the eye of the community; it acts upon conscience in its ostensible capacity. But, independently of this lofty impulse, being permanent as a body, and pledged to a common purpose, it has a greater stake of interest in assuring the genuine quality of medicines than what belongs to the value of any contingent gain, which could possibly arise from procuring drugs of an inferior quality at an inferior price. It may therefore be more safely trusted; for the correct execution is influenced by a tie of interest which spreads wide and extends to distant times. The supply of army medicines is a

minor object in the concerns of the corporate body of apothecaries; as such, it will be executed in the way of common business. It is the great or sole object of concern in the case of private contract; and as the concern is great and the object temporary, the view of the contractor is naturally directed to contrive the means of fulfilling the conditions at the least expence:—the gains are thereby augmented. If this be so, and it ranks among the probabilities, there is hazard that they be not well fulfilled: the hazard is also more important, where few are judges of the qualities of the things produced. The qualities and conditions of drugs are not known to common persons with the same certainty, as the qualities and conditions of common commodities; in many cases, they are discoverable only by trial; and, on this account, the faith of the contractor ought to be a public and ostensible faith, as thereby affording the best security against the chances of imposition.

CHAPTER IV.

Economical Administration of Hospitals—Purveyors and Matrons—Diet—Mode of Purveyance—Expense—Form of Accounts—Exhibition, Examination, and Control or Acquittance.

IT is proved in experience that hospitals may be well constructed and well equipped; physicians and surgeons may be skilful in their art; in short, all the means may be ample in quantity and magnificent in kind; but effect will not be fortunate, unless the rules of economy be laid on just foundations and rigidly executed in practice in all their parts; consequently, the economical provisions of hospitals are important in their nature; and as such they demand a place of consideration in the medical fabric constructed for the use of armies. It is implied, in the system of arrangement now submitted to the public, that a basis of calculation be established on common grounds and applied in the adjustment of all hospital concerns, whether medical or economical, according to an estimated and just proportion. The amount of hospital subjects in the example assumed for illustration is supposed to consist of one hundred and sixty persons, suffering under various forms of disease, at different periods of the course, or in

Estimate of
economical
servants.

different progress of recovery. The means are consequently calculated according to that scale. But, though one hundred and sixty be the basis assumed for calculation in the present instance, and, as such, supposed to define the fundamental rule of proportion, it is notwithstanding to be remarked that, if the hospital subjects amount to five hundred instead of one hundred and sixty, the number of persons, required for the purposes of economical administration in the greater establishment, does not require to be increased in proportion with the increased number of the sick. The reason is plain; certain parts of the duty are of such a nature as to fall together for execution in the larger hospital with a saving of aggregate labour, consequently with a saving of means implying expence of money.

1. All those matters which relate to the act of receiving the sick, of bathing, clothing and equipping the patient previous to admission into the sick ward and consignment to the care of the nurse, are supposed to be under one direction: in hospitals of the extent stated they may be supposed to be within the compass of one man's execution. Such person is consequently charged with the care of the receiving and bathing rooms, with the care of the store of apparel, as dressed, arranged and ready for the use of the sick. He is intrusted with the key of the gate, and is thus the

medium of communication with the exterior; which, in a military hospital particularly, is a trust of some responsibility, implying intelligence, steadiness and tried honesty.—2. The business of washing is a concern of consequence in hospitals of all kinds, but more especially in hospitals, in which the acute diseases bear a high proportion to the others. It cannot be executed in the case supposed by fewer than two persons—expert and qualified for all the purposes of washing, drying and mangling.—3. Cooking, or dressing the provisions of sick persons in a proper manner implies some skill in art, as well as fatigue and toil. If the cooking-place be well contrived, furnished with all manner of conveniences calculated to abridge the extent of animal labour, one person, active in disposition and well qualified in knowledge, may be considered as sufficient for the stated purpose in hospitals of the specified dimensions.—4. A steward, whose duty consists in receiving provisions from the commissary or contractor, in arranging and distributing, or superintending the distribution of diet, in keeping the accounts of receipt and expenditure of every denomination follows next in the list of economical servants. It is important that he be well selected, for it is commonly known that the regularity and good order of hospitals depend much upon his being fit for his office. The hospital provisions are drawn from the commissary or contractor, ac-

according to a specified return of diets expressed in regular diet tables or in tables of extra diet, sanctioned specially by a requisition of authority as explained in the forms annexed*. The issue from the store of the minor articles, which are sometimes required for the uses of the sick, is sanctioned by an authenticated order of the physician or surgeon. This preserves the whole process correct, precluding the possibility of abuse without connivance on the part of the executive or medical officers.—5. Next to the steward of provisions stands a steward of linen and clothing, viz. a person charged with the superintendence of the washing and repair of linen and other hospital apparel, acquainted moreover with the best manner of preparing drinks and the nicer parts of the sick man's diet, as beef-tea and bouillon, jellies, tarts, custards and such medicated drinks or diets as the physician may think proper to prescribe on particular occasions. The office assigned to this person, in preference a female of respectable character, demands some knowledge of figures; such, for instance, as is sufficient to enable her to keep an exact account of the matters which are placed under her charge.—6. A barber, for the purposes of shaving, applying blisters and administering glysters, with a pioneer or labourer for the performance of all kinds of drudgery—for

* See Table N° XIV. at the end of this Chapter.

keeping the privies clean, and for removing all nuisances from the hospital enclosure completes the establishment of persons deemed necessary for the execution of the duties of the economical department of hospitals of the dimensions described. The assistant surgeon, who is understood to reside in the hospital and to be intimately acquainted with all the forms of duty and all the circumstances of the sick, is charged with the office of making out the daily reports, the weekly states and monthly returns, with marking the tickets of admission and discharge, and with executing any other writing business which belongs to the medical department of the institution;—when forms are simplified, the labour is light and the effect correct.

If the above establishment of economical servants be compared with the economical establishments of military hospitals among the warlike powers of the continent, even of military hospitals in Great Britain, it will be held to be rated too low in number: it is however known, from trial, to comprise whatever is useful for the just purposes of need. It would be superfluous to attempt any proof of what is clear in itself. It must be evident to those who take the trouble of considering the relations and uses of men and things, that while the useful means are provided in just quantity in the case under view, the provision is

superfluous in number or embarrassing in its nature in the foreign establishment alluded to, particularly in the Prussian. It is not necessary to go into detail : the general principle which directs the arrangement is obvious ; and, as the general results are important, it will not be deemed improper to notice the outline of the operation. The Prussian military hospital is an artificial mechanical fabric, formed in the assumption that all its parts are subordinate operating instruments, acting on matters capable of being driven into order by the tactician's rod, that is, of being constrained to move in regular channels by means of force. It owes its origin to the spirit which dictated the Prussian military code ; and it is capable of a somewhat similar effect. It exhibits, or, is capable of exhibiting a correct mechanical movement in all parts of the economical detail ; it never can be expected to produce an example of medical excellence ; for the physician, who is the genuine soul of hospitals, acts a subordinate part, constrained to move through his routine of duty mechanically. If the case be considered in its just reasons, the error of the principle presents itself in a prominent view. If the intention of instituting hospitals for the reception of sick be the speedy and effectual cure of diseases, it is self-evident that the physician ought to be sovereign of all the means ; for, whether medical or economical, they are essential to the cure of disease, which is the

physician's office and the ultimate purpose of a medical institution. The physician, who is supposed to be a man of common sense, professional knowledge and strict integrity, is competent to estimate, arrange, and to verify the application of every thing which relates to the sick: he is, in fact, the only person who is capable of doing it with knowledge, for he is the only one who is correctly acquainted with the condition of the subject. He ought therefore to be permitted to form the medical arrangement without control of higher authority: he certainly ought to occupy the first place in a fabric which the light of his genius animates, and which its exertions only can be supposed to maintain in useful movement. If the economical and medical department of hospitals be separated in constitution, the official acts committed to different instruments with powers in some manner distinct and independent, it must be admitted by every person who considers the reasons of things that, if the economical be placed higher than the medical, the just order of the parts is inverted; yet it must be confessed that this, however absurd in reason, appears to be the case in fact in the so much boasted hospitals of the king of Prussia: there the office of economy director and his numerous dependents attracts more notice and commands more respect than that of physicians and surgeons who administer to the sick or wounded. The economical administration being

constituted as independent, or rather as sovereign, maintains a resistance, even through prejudice or ignorance is liable to assume a counteraction. The beauty of mechanical arrangement was prominent in the eye of the great Frederick ; the value of medical science was not understood by him ; its effects, as exerted without military control for the cure of disease, were not admitted into his calculations. The economical officers, as drill serjeants of the hospital, were held to be important in their constitution ; they were numerous, and of many gradations in rank : the physician was a working instrument, confined to the mechanical routine of prescribing the ptisan or bolus ;—the essence and spirit of his art could scarcely be said to be permitted to act in this complicated machine.

The economical department of hospitals, held to be so important in the Prussian hospital regulation, and constituted as it were in a separate and independent circle, was also separated, in some manner, from the medical office in the military hospitals of the British nation ; but it was separated according to a rule which belongs in some measure to itself. The British purveyor of hospitals combined in his own person a double office : he was contractor, commissary or agent for contract as the name imports ; and, while so in fact or by commission, he was at the same time head

of the economical department and master of the economical detail. The nature of his office is now changed. The purveyance or supply of provisions has been incorporated of late with the transactions of the commissary-general in most cases of foreign service: the duty of superintending order and economy belonged at all times in reality, though not in name, to the medical officer. This concerns the sick, and, as such, it can only be rightly understood by those who possess some knowledge of the sick condition. The medical officer is the only person who has the power of ordering the application of means in hospitals: he orders means for a specified purpose; it belongs to his duty to verify application: he otherwise leaves his business unfinished. If such be the duty of the medical officer, and his conscience must tell him that it is, the appointment of purveyor as superintendant of economy cannot be otherwise than superfluous. The purveyor does nothing, or he assumes a station in which he incurs the chance of embarrassing the views of the physician by unskilful interference. But, if the office of purveyor be unnecessary, even embarrassing as interfering with the superintendence of economy in the manner now stated, it is rendered literally superfluous by the purveyance of hospitals being committed to the department of the commissary-general. This is the case in most places in the scene of actual service where gene-

ral hospitals are established. The duty of purveyor, according to the original meaning of the office, was a double duty strangely combined. A purveyor, who is a contractor, provides on speculation of chances, and furnishes by requisition: he cannot be allowed to judge of purpose, and he is no ways interested in the observance of hospital economy as a contractor or agent for contract. It has been observed already that the purveyor may now be considered as being deprived of the substance or essential part of his office—the power of purchase or real purveyance. He still retains the name of purveyor, while reduced in reality to the condition of simple hospital steward, he receives means from the commissary or contractor according to the authenticated requisition, accounts for distribution by the exhibition of regular diet tables, or other authentic voucher. This is the case, and with this nominal importance without real purpose, the office is converted into a sinecure; for while literally a stewardship dignified with a commission, the commissioned steward has recourse to another steward or inferior servant to do a duty which he is himself capable of doing: this implies an addition of expence to the public,—the first might be saved.

The purveyor retains his name; the virtue or lucrative part of his office is transferred, as has been observed, to the commissary-general; the

duty of the other belongs expressly to the physician; the office is thus void in reality. The office of matron, which seems to be considered as of much importance in military hospitals in Great Britain, is another excrescence which calls for a remark in this place. If economy of money be regarded in the arrangement of hospitals, that part of the matron's duty, which relates to keeping the account of washing, repairing linen and clothing, and preparing the nicer parts of the sick man's diet, may be executed correctly and effectively by a person who is less important and less expensive than the present matron of British hospitals is found to be. There is waste from superfluity in one view; the interference of the matron with nurses and attendants may probably be injurious to the interests of the sick in others; for it has a chance to be wrong, unless she accompany the physician in his visits and receive special directions for her conduct in his absence. She is then to be considered as a superintending nurse—of more experience and more intelligence than the common nurse, and as such useful. But, though an experienced and intelligent person may be useful in the case stated, it is only in a supposed defect of qualification among the ordinary nurses that she becomes so. This is a defect to be carefully guarded against; hence, notwithstanding the contingent usefulness here supposed, it must still be admitted that the office, so de-

finer, is liable to produce a cold indifferent execution of duty, inasmuch as the order which passes through this channel is committed to a circuitous route. It is implied in the hospital discipline recommended by the author, that the physician of a military hospital do not conceive his duty to be finished when his prescription is written. He ought to satisfy himself by the testimony of his own senses that what he orders is carefully prepared; when carefully prepared that it is actually administered; when administered that the effects and their degrees correspond with his expectations: and, as the medical prescription does not embrace the whole of the process upon which the recovery of health depends, he ought further to ascertain by his own observation, that all the parts of regimen and economical care are correctly executed. It is evident that the fewer steps intervene between design and execution, the more certain is the effect and the less is the chance of deception. A military officer, who is jealous of his reputation, and who knows the value of his character, verifies every important point of information by his own observation. If he trust to the eyes of others he may be deceived in his judgment, and defeated in battle with the means of victory under his command. The case is similar with the physician. If the physician commit the execution of the important parts of the treatment of the sick to deputies, who dele-

gate their power to other deputies, whether the subject relate to the distribution of medicines and diet, or to the concerns of personal care and cleanliness, he is not capable of calculating a precise effect, and in all probability incurs a similar penalty with the incurious officer—culpable in the death of his patient, not as prescribing unskilfully, but as not verifying the just application of his prescription. It is a truth, felt and universally acknowledged, that the charge of responsibility is lightened in proportion as the execution of the work is divided among many persons; the power of substantiating errors or neglects is even sometimes lost altogether in multitude. It is thus that the physician, who trusts the execution of his orders to a matron, who, little interested, or placed in her own opinion above the duties of her office, trusts to a nurse, the nurse, by similar delegation of duty, trusting to an orderly, is liable to find his orders neglected, his meaning misunderstood and his means misapplied. This is an evil of serious import; for the sick are exposed to suffer by neglect or error; it is precluded, in a great measure, by the form of discipline instituted for the management of hospitals in the plan proposed. The orders are there communicated directly from the acting physician to the acting nurse, the physician divesting himself of responsibility of execution in no case by the creation of intermediate steps of delegated

power. Such are the circumstances of hospital matron; it may appear to some to be unnecessary to have said so much on the subject; but the author is desirous that the principles of things should be understood in their full extent, and from all views of the subject which he has been able to attain he thinks he is warranted in saying, that the office of matron is superfluous in its nature, and often injurious in its operations in military hospitals *.

Diet.

A just calculation and right arrangement of hospital diet must be considered as an important concern in the department of health, whether viewed as a question which relates to economy of money, or of medical effect contributing to the cure of disease. It embraces a subject of considerable latitude, in which there exists some difference of opinion among professional writers. There are some who recommend a correct measure of diet, even a rigid abstinence for persons who are labouring under disease, or who have attained certain points in recovery; there are others, who are disposed to indulge the appetites, even to recommend variety of food and full living, as the speedy and direct means of restoring strength, or repairing the flesh and fat that have been wasted in sickness. The wisest of the an-

* See Note A.

cients, whether physicians or philosophers, stand among the advocates of the abstemious plan,—and the authority of the ancients is something. They were correct observers of nature, and perhaps better judges of the useful and the hurtful than the moderns of the present day with all their accessions of scientific knowledge. The opinions and practices of the physicians and philosophers of Greece and Rome are strongly in favour of abstinence; and, as much of our practice in the cure of diseases and regimen of life has been adopted from sources of ancient learning, the rule of temperance and abstemious living was the rule inculcated in the treatment and subsequent recovery from acute diseases by European physicians till within these few years. It has now lost its credit; and it retires from the scene giving place to its opposite. The change to opposites, though great, is not unnatural here more than in other things. It is a common remark that the opinions of men are revolutionary, generally moving from extreme to extreme, rarely assuming the middle or just point of position as a consequence of recent discovery of error. The rule of abstinence, which is a fundamental rule of utility, was observed to be useful, in most cases, in the course and under recovery from acute disease; and, as such, it was usually enjoined. It was probably sometimes carried to excess,—and its application was perhaps sometimes misunderstood. When excess

occurs, the opposite practice produces signal effects: and, in this manner there were some of the ancients, who, in whatever manner they reasoned, acted in a way to obtain praise from the indulgence of a full meal. Among these Petro is the most distinguished; but though Petro and others among the ancients occasionally indulged, or perhaps more properly forced the appetite, they did so partially and conditionally; it is only of late years that a doctrine, supported by systematic reasoning, has permitted or recommended a full measure of diet for persons labouring under the actual influence of acute disease, or in the first stages of recovery. It often happens that medical practices arise in accident, gain currency from success or delusion; the reasoning, which justifies them, follows afterwards: in the present case, the reasoning preceded the general currency of the practice. Among the number of the magic symbols which have attracted the notice and amused the fancy of the medical world, the term debility is not one of the least considerable; its dominion has been extensive for some years. In a conjectural science, such as the medical, the mind of men of genius wanders in quest of novelty. It moves with rapidity, and, having glanced at an object superficially in the course of its pursuits, it is liable to amuse itself with appearances, however fantastic and flimsy in their nature,—not capable, as biassed with self-love, of submitting

the subject to the rigid tests of unprejudiced examination. It is obvious to every man's comprehension in the present times that the various causes, which had been assigned by medical writers as the causes of fever, were arbitrarily assumed; they were symptoms or non-entities, consequently they rested on no solid foundations as general causes. In the midst of this perplexity, arising from the assumption of partial terms or terms of no meaning, an ingenious author, observing an effect generally connected with the presence of febrile action, threw out the idea that the proximate cause of fever consisted in debility. The term is negative, whether depending on a suspension or exhaustion of active powers it implies the inability of producing action. If debility be the proximate cause of fever, exhaustion or want of power is an obvious effect of want of food; consequently, if the first be granted, it follows as a natural inference, that food or aliment being an obvious cause of supplying the power which is exhausted or spent, a full measure of rich and nourishing diet, with a liberal allowance of strong liquor for drink, furnishes the direct means of obviating the access of the debility acting as a cause, or of restoring strength which is wasted in sickness as an effect. This doctrine, which might be considered as a corollary of the theory now alluded to, though it did not originate with the author of that theory, is plausible in ap-

pearance; it made rapid progress in the schools and infected the junior class of practitioners. The practice is gratifying in many cases to animal sense, and the reasonings, having some analogy with common opinion, fell in with the prejudices of the multitude. The assumption of debility as a cause of fever is arbitrary,—the supposition is even absurd; for if fever imply action, which it obviously does, and if debility imply inability or want of power to produce action, which is also plain to common apprehension, we must establish a new form of logic before we attempt to constitute debility as the cause of active fever. But, though the reasoning has no foundation in nature, and the practice demonstrates only very partial success in trial, it is not certain that sounder reason or better experience will ever so far prevail as to extinguish its influence. The doctrine is an error, the practice a prejudice; yet it is a prejudice which has seated itself in the citadel of the animal machine, and, as such, possessing a firm hold of man's animal nature, it will not be easily expelled.

The just arrangement of hospital diet is a matter of material consequence in various points of view. Whatever be the principle which regulates the scale of measure,—liberal or penurious, it is necessary that a rule of order and consistency be rigidly observed throughout—in application to

practice. This is necessary for the sake of economizing money, as well as for producing correct medical effect. Hence it is, that *tables of diet* are formed for the use of hospitals on a general basis, calculated so as to correspond with the general conditions of the sick, and classed by orders for the sake of method and for facilitating the execution of the common business. The arrangement of this matter requires forethought and attention, for the forms and conditions of disease are various: and, as the original forms of disease are various in themselves, so complications of various forms with each other occur not unfrequently in the same subject. Acute diseases are the most striking on account of their dangers; they are also the most important on account of their frequency; consequently they demand the most careful arrangement of diet during their course, and the greatest attention in the observance of the preservative rules during the progress of recovery. The chronic form of disease is frequently local or organic,—the suite of an acute malady, which has constituted, in its course, a train of diseased action, so confirmed in its movement as to assume the aspect of a constitutional habit. The diet in this case, instead of being secondary as relative to ordinary nourishment, is primary—medicated with a view to effect a change of error, that is, to repair a faulty organization. This is a tedious process, not accomplished without a steady perseverance,

sometimes without a perseverance continued for a course of years. There thus arise from this view of the subject two general outlines of character for the regulation of hospital diet. The one comprehends that which is subservient to ordinary nourishment, consequently composed of common materials, proportioned and measured exactly in quantity according to condition of subject and stage of disease; the other is radically a medicated diet, by means of which the physician operates a change in diseased habits, alters movements by a slow and almost imperceptible progress, repairs injuries, and lays a new basis of sound organization.

The diet of persons, who are actually sick or recovering from sickness, is measured in quantity according to the condition, consequently quantity is a leading feature on the face of every diet-table. In the early stages of acute disease where little nourishment is required, and where no solid food is admitted, the measure is of the smallest scale—the quality the most simple; it is termed *low diet*. When the acute stage is past, the convalescence commenced, its course not finished, the measure of diet is increased,—the quality for the most part similar to the quality of the diet of ordinary health:—in correspondence with the state of the subject, it is termed *middle* or *half diet*. In the more advanced progress of recovery, where the

healthy functions are restored, but where the ordinary occupations of labour or amusement are not yet resumed, the measure is increased to what is termed *full diet*. The just measure of full diet for the higher class of hospital subjects, according to our best knowledge of the laws of animal economy, as founded in reason and confirmed by experience, finds its place somewhat below the quantity of diet allowed by regulation to those persons who are in full health, who live in the open air, who labour in the fields, or who pursue a course of active amusement. This rule stands on solid grounds according to reason; it also corresponds with vulgar opinion. It is among the common opinions of mankind, that bodily labour or active exercise implies an expence of force which calls for a supply of common aliment in greater quantity than a state of rest. The maxim is an old one; and, in conviction of the truth of it, it is customary to curtail the ration of provisions for troops embarked in transport ships, not only with a view of economizing provisions, but as a measure of safety preventive of sickness. Where the mind stagnates in want of pursuit, and where the body is at rest in suspension of labour, the habit is disposed to become full. Where the habit is full, the material of irritability, of whatever nature it may be, is ordinarily accumulated in excess, the routine of healthy action is then liable to be interrupted; its or-

ganism disposed to assume a new or perverted movement with the application of slight adventitious causes of stimulation. This doctrine, which appears to be reasonable, and which experience proves to be true, may be considered as exploded in the practices of later years. There are persons in the present times, and among others, those, who are intrusted with the arrangement of the concerns of the military general hospitals in Great Britain, who adjudge a higher portion of diet to a certain class of hospital convalescents, though comparatively speaking in a state of rest, than is allowed by regulation to those persons who are in possession of full health, performing military duty and undergoing military toils in all their extent. As the volume of the body is diminished and the muscular strength impaired by the effects of sickness, it may be supposed to have struck the fancy in the present case, that the obvious means of recruiting what is lost by disease consists in indulging the appetite, supplying the stomach liberally with variety and quantity of food. If this be the probable reason of the experiment, it is further to be remarked that the superficial appearance of things sometimes gives countenance to the success of the practice. It is ordinarily observed that the body fills rapidly after sickness under a full regimen: it is not to be disregarded that the disease recurs unexpectedly, and more frequently in the case

alluded to than under the opposite circumstances. It is a truth well established by a multitude of experiences, that disease is less liable to recur where the diet is spare and simple, the quantity measured correctly as suitable to the conditions of the subject, than when the patient is left to be guided by the solicitations of his appetite. The progress of recovery is slower in one case than in the other, its course is seldomer interrupted by accident; consequently the question is reduced to the simple point in this case, which of the two is the most eligible, viz. the chances of relapse, as multiplied by the effects of full living, or the slow and gradual recovery of health, as connected with rigid adherence to an abstemious course and regular measure of diet.

The table of hospital diet, constructed for the use of sick and convalescents, is ordinarily calculated for the conditions of acute disease and its consequences: it is divided into three scales or orders, viz. *low*, *half* and *full* *. There rarely exists a desire for food of any kind in the first stage of acute disease,—of solid food there is often an abhorrence. If there be no desire, there will be no good; on the contrary, there will be harm in gorging a patient with strong things when nature revolts against them. The *first*

* See Table, N^o XV. at the end of this Chapter.

days of fever are usually characterized by want of appetite: solid food is not relished, and it is not useful: dilution or drink is craved, and it often is necessary; hence rice-water, barley-water, vinegar and water, lemonade, and pure spring water are supposed to be always ready prepared—at the command of every hospital patient. Tea, as commonly used with milk and sugar, bouillon or beef-tea, with such allowance of bread as is judged to be proper, or such extra refreshment as the case demands, are presented, not at fixed hours, but at the times which are esteemed to be the most suitable in the opinion of the physician, or as best correspond with the desires of the patient. Tea, prepared with care and of a good quality, forms the common breakfast of those who are in the acute stage of fever; beef-tea or bouillon the dinner or mid-day refreshment. This may be made strong, so as to be highly nourishing; or, it may be diluted, so as to be given in the place of drink. Beef-tea extremely diluted, or chicken-water well purified, is agreeable to most persons in the early stage of fever; and, while agreeable in such condition, it is not fairly chargeable with the imputation of aggravating the force of the fever by the stimulating quality of the animal material, for the proportion is insignificant:—it is safe, and even useful as a diluent under the operation of cathartic medicines. The patient, who is under the influence of acute disease, will rarely,

if left to himself, fall into error in the measure or quality of his diet, particularly while the disease is in the vigour of its course; the danger is greater in the first stage of convalescence, for there the appetite for food, in the first absence of disease, often exceeds the proportion of what is just measure or safe quantity for the security of health. The allowed measure of diet in the first stage of convalescence is marked in the table Half Diet; the nature of the aliment similar to what is usual in health: the quantity is measured correctly according to the conditions of the subject, the quality is suitable in kind, and the art of cookery renders it digestible in the stomach and savoury to the taste. Rice-milk, milk-porridge, tea, cocoa, coffee, or vegetable soup, varied occasionally according to circumstances of subject, form the breakfast of the convalescent class. It is useful to change the form of diet occasionally,—to consult the likings and dislikings of individuals, for it is of consequence that the appetite be preserved keen at all times—not satiated with superabundant quantity, or nauseated by quality that is disagreeable. It is obvious that the proper management of diet constitutes an important point in the treatment of convalescents;—any attempt at proof is unnecessary. A well-cooked and a well-seasoned diet supersedes the use of stomachic tinctures; and a just measure, for the most part, precludes the necessity of having recourse to vomits and

purges as remedies against superfluity. The common dinner for hospital subjects, particularly in British military hospitals, consists of broth and boiled beef,—a wholesome, and to most soldiers an agreeable form of diet. It is understood in the case under consideration that the materials are of the best kind, and that the cookery is skilful; otherwise the mess will be nauseous to those who are nice, and oppressive to those who have feeble powers of digestion. Broth and boiled beef,—the broth made according to the annexed receipt*, or soup made with turnips, carrots, herbs and greens, constitute the common dinner of those who are convalescent in military hospitals. But, as the return of health and vigour is accelerated by acting on the living fibre through various forms of stimulation calculated to produce forms of action similar with those of health, and as the stomach is the organ in the animal machine suited to receive impression and communicate movement to other parts, so judicious and well-considered interchanges of diet are employed with good effect to assist in this useful purpose. Hence it is proper, in correspondence with this idea, to substitute a stew of mutton and potatoes for the ordinary broth and boiled beef on one day of the week, vegetable soup, rice, pudding or apple-dumpling on another. The full diet consists of

* See Appendix to Table N^o XV.

materials of the same quality as half diet,—cooked after the same manner, and varied occasionally by interchanges on certain days of the week. The quantity of the full diet is noted in the table: and it is only to be observed in this place with regard to it, that, if three quarters of a pound be the regulated daily allowance of a soldier performing military duty and undergoing military toils, half a pound may be considered as sufficient for a convalescent at rest in hospital, particularly as breakfast and supper are provided for the hospital convalescent from an extra source.

The division of diet now stated is the ordinary Extra diet. division of hospital diet. It is important that the diet be well prepared; and, on this account, a skilful cook of good taste and correct economy is a person of value in the hospital establishment: he has the power of giving much comfort to the sick person during his illness, pleasure and benefit to the convalescent during the course of his recovery. The ordinary diet noticed in the table serves for ordinary purposes, either during illness or in the progress of convalescence. When circumstances occur which call for extra allowance in quantity, or for change in quality, the necessary supply is marked in the extra table constructed according to the form annexed *;—special direc-

* See Table N^o XIV. Extra Diet.

tions are there given for the manner of distribution.

Medicated
diet.

What has been said above relates to the diet of persons as standing in the various conditions of acute disease, as under recovery, or as suffering from maladies of a common nature. The diet in such case is considered as a common nourishment; in others, instead of being a common nourishment, it is to be considered as a remedy—the sole or principal remedy employed in the cure. Milk, whey, vegetables, fruit, the juice of divers herbs and grains variously prepared constitute the only allowable diet in some cases of illness. Where the foundations of disease are deeply laid, engendering a habit of action, so confirmed by continuance, as to be in some manner constitutional, it is by a rigid perseverance in the use of medicated diets only that favourable changes are capable of being effected. Medicinal drugs are then accessory means, diet is the cardinal remedy. In the common case, drugs form the remedy; diet is the common nourishment necessary for the support of common health.

Changes of
diet.

In arranging a form of diet for hospitals, it is a matter not undeserving of consideration to study the appetites of the sick, carefully contriving such forms of nourishment as are calculated to restore strength and vigour to the moving parts, without

overloading the stomach by quantity, or incurring the risk of filling the vessels too suddenly by diets of a peculiar quality. It is admitted in the present case that peculiarities of appetite call for attention on the part of the physician; but, while attention to the cravings of the patient is not a matter of indifference as relative to the medical effect, it must also be borne in mind that the limits of indulgence are to be so confined that the basis of system and regularity, so indispensable to the good management of hospitals, be not capriciously overturned. Soldiers are accustomed to dress their victuals after one form of cookery in the course of their military service. They submit to it as to a part of military discipline; but, under sickness, the severer restraints of discipline are relaxed. Soldiers of different countries, even individuals of the same country retain peculiarities in the midst of their military habits, which claim attention from the physician in times of sickness. It is therefore provident, in preparation against this chance of peculiarity, to direct that two kinds of soup be prepared daily for the hospital patients, viz. barley broth and common soup made according to the receipts annexed. As there are many people who do not eat barley broth with pleasure, and some whose stomachs do not digest it with ease; so rice and oatmeal are disagreeable to others in every form into which they can be thrown. Common soup is prepared for those

who are prepossessed against barley broth; tea, coffee, cocoa, milk, &c. are allotted for the breakfast of those who do not relish rice or oatmeal. It implies no great expence of money or waste of time to vary the mode of dressing provisions; even a substitution of things of other quality, as suitable to the varying taste of individuals, is easily procured. As the measure is not expensive; and, as it is not indifferent in effect, as classed among the means which are provided in aid of the recovery of health, it may reasonably be supposed to engage the attention of those who are intrusted with the management of hospitals*.

Supply of
provisions,
&c.

The next point of consideration, on the subject of hospital economy, relates to the best mode of ensuring a supply of provisions and other articles of refreshment necessary for the purposes of the sick. As large and rich towns are ordinarily supplied with the best provisions of the districts in which they are placed; and, as military force is usually stationed, either in or near wealthy towns in times of peace, the provisioning of hospitals implies no difficulty, and is exposed to little or no chance of accident; for, the provisions and principal refreshments of the military sick are such as abound in every cultivated country. Hence it is plain that the purveyance of hospitals is easily

* See Note B.

managed in Great Britain ; perhaps it is no difficult matter in any civilized country in peaceable times. In war the scene changes, and the market is precarious. In this case, a commissary is attached to armies, as an officer appointed to provide and supply the troops with provisions distributed in rations according to the requisitions of officers commanding corps : it is easy and direct in point that he also be instructed to supply the sick in hospital with a sick or hospital ration of a suitable kind, in compliance with the requisition of the physicians or surgeons authorized to make requisition as persons intrusted with official charge. The hospital ration, thus commuted and varied in kind, is calculated to meet the value of the common ration of the troops. As commuted suitably in kind it serves the hospital purposes, and as estimated in value it produces no change in the balance of things. The process is simple in execution, implying no difficulty, and comprehending little more trouble than what belongs to the issuing of provisions to a like number of troops in camp or barracks.

The prices of the great articles of hospital consumption preserve a certain ratio or balance of equality through the different parts of the kingdom ; consequently, the commodity which is procured at the nearest market will, for the most part, be cheaper to the consumer than the com-

modity which is purchased at a distance somewhat lower in original cost, but chargeable with the expence of transport to its destination. As merchants form their arrangements on a general basis, and calculate every thing with a view to gain, they discover modes of transporting saleable commodities at a cheaper rate than individuals who have one detached purpose in view can be supposed to do; hence it is obvious that in all places, where hospitals are established, or where troops are quartered, the ordinary articles of provision and refreshment, wanted for daily consumption and procurable on the spot, are provided there on easier terms than they can be otherwise obtained. As the expence of transport is thereby saved, which independently of other considerations is not of small amount, it is evident that economy, and, in most cases, convenience will be the result of the practice. This is plain, so plain that it might be deemed impertinent to move a question on the subject, were not a contrary rule followed generally in supplying the military hospitals of this kingdom. It may appear strange, but it is notwithstanding true, that supplies of transportable articles of hospital consumption are sent from London to the most remote of the general hospitals within Great Britain; though it be perfectly well known, that the market price of the articles wanted is actually lower at these distant places than it is in the me-

tropolis. This practice was followed during the late war; and it even exists at the present time. It is not the most direct way of accomplishing the useful purpose, and it will scarcely be esteemed to be the most economical manner of executing the public service.

If it should seem good to those who arrange the financial concerns of the nation that articles of hospital consumption be supplied at the cheapest market, it will be proper, in order to ensure the execution of the purpose on sure grounds, to publish a general notice that a contract, for the supply of certain specified articles of hospital consumption, is offered *au rabât*. Milk, meat and bread are articles of daily consumption in hospitals, and, as they are articles which cannot be laid up in store, it consequently is wise, even necessary to adopt such measures as may ensure a regular supply of means which are indispensable: it is evident that this must be done under a penalty. The definition of quality is simple, viz. bread of the best flour, well manufactured and well baked, meat, whether beef, mutton or veal (and of these the sick men's appetite requires occasional interchanges) of a good marketable quality, milk—new and direct from the cow—without admixture of water. Such is the definition of quality, and, as it is intelligible to every man of common sense, it is expected that

the medical officer, intrusted with the charge of the hospital, examine and verify the condition, enforcing the rigid execution of the contract under its penalties:—the good of the sick and the success of his professional labours essentially depend upon it. When the quality of articles of common consumption is defined, the market price publicly known, as the persons intrusted with the management of the hospital concern are supposed to have common sense like other men, there can be no grounds to suspect that imposition will be practised on their judgment. The prices cannot be supposed to be higher than the prices of the common market; it is even probable that the advantages arising to the trader from a certain daily demand, with the knowledge of certain and prompt payment (for all hospital accounts are to be settled, paid and acquitted at the end of the week), will so operate as to produce a contract lower than the common rate. It is proper that the contract for bread, meat and milk be limited to periods, in order that a ratio be preserved with the public price of things, and that the contractor be enabled to form connexions on stable grounds for the purpose of procuring the regular supplies. This is fair, even necessary; it is at the same time understood that the fulfilment of the conditions in every stage and particular be adequately ensured. —When the tenders have been received and considered impartially by competent judges, the re-

port, with opinions thereon, is submitted to the military officer commanding; for, without the sanction of the military officer commanding, a contract cannot be supposed to be valid in any object of military concern.

The milk, meat and bread are articles of indispensable necessity, and, as they cannot be laid up in store, the regular supply must be ensured under a penalty: there are others, such as oatmeal, barley, rice, tea, sugar, coffee, porter, cyder, ale, wine, brandy, rum, gin, with various other things, which, as they may be laid up in store, may be provided in greater quantities than the amount of the daily consumption. This is usually done; yet it may be added, that where there is a market on the spot, it is better that they be provided only for the consumption of short periods; for instance, for the probable consumption of the week: this corresponds with the weekly settlement of accounts, and is therefore the eligible rule. These articles are to be purchased by sample; the samples to be presented by different dealers—with prices affixed. The samples being submitted to a committee of officers, who are competent to form opinion of quality from their common knowledge of the properties of such commodities, it follows of course that preference in choice is given to that which is cheapest and best. In this case there is no contract, or stipula-

tion for the privilege of furnishing the supplies for a given time, the dealer understanding that he is only allowed to do so as long as his commodities preserve advantage, at least maintain equality with others: but, that this may be known to be so in reality, the proposals are supposed to be renewed every three months,—laid open at these periods to all the dealers in articles of hospital consumption, so that no grounds may exist for the most remote suspicions of collusion on the part of public servants.

Detail of
mode.

The mode of hospital purveyance proposed in this place is the most eligible; it produces the cheapest market—and the best; it is exempt from abuse, and, as it is exposed to view, it is under no suspicion of connivance. Every transaction is open and public; no centage or discount is allowed to be applied to the benefit of the disburser of public money,—a practice, which, wherever it obtains, can only be considered as a covered species of fraud. A commissary for armies or a purveyor for hospitals, receiving daily pay for a stipulated service, is only an agent for contract, confidentially intrusted with an office of responsibility. As such, not being entitled to a private consideration for the performance of a public duty, a centage or gratuity, from the contractor, implies a connivance or imposition of fraud upon the principal. The trust of a commissary or pur-

veyor, though public, is as sacred as any trust that can be delegated from a master to a steward; and whatever may be the opinion, or whatever may have been the practice in this case, it ought to be as sacredly preserved. The open exposure here recommended, the mode of contrast of cause and effect hereafter detailed ensure honesty in all the parties in spite of evil propensities.

It is evident from the example of what is commonly known, that where troops are permanently stationed in the vicinity of market towns, the supply of provisions and refreshments for the use of those who are sick is ensured with certainty, and obtained with little trouble in the manner stated: in the scene of active war, where positions are liable to be changed daily, the case is different. It is then necessary to commission a person expressly for the purpose of executing the purveying part of hospital duty, or, what is still more simple and less liable to abuse, to instruct the commissary-general who supplies the acting army with the stipulated ration of provisions, to incorporate the hospital purveyance with the other concerns of his department, so as to be prepared to meet the necessities of the sick on all occasions, as well as the wants of those who are in health and performing military duty. In proceeding to adjust this part of the business, it is supposed that the absolute and relative value of

the soldier's ration is known correctly. The kind and quantity of the hospital ration in the different scales of diet are fixed by the chief medical officer, or by a committee of medical officers as suitable to the different classes of sick or convalescent; the value of the relative parts exactly estimated, occasional commutations may be made on just foundations and on equal terms to all parts of the service—without difficulty and without error. The commutation alluded to consists in fresh meat in place of salt, wine in place of rum, soft bread in place of biscuit, &c. *ad valorem*, with such interchange of the smaller species of provisions comprehended in the ordinary schedule of ration, viz. sugar, rice, coffee, cocoa, tea, &c. as the medical officer intrusted with the charge of the hospital may judge to be suitable for the purposes of the sick. The hospital ration, as well as the soldier's common ration, is issued upon the presentation of a specified requisition of authenticated authority. The ration is considered as right and property according to the custom of the service; and, as it rarely happens that the whole of this right and property, in beef and bread, is necessary for hospital consumption; and, as it is admitted that the other refreshments are sometimes useful in forwarding recovery or in adding temporarily to comfort, the commissary-general, who is instructed to issue quantities according to specified requisitions, is further supposed to be

directed to pay in money at the period of settlement, which is once a week, the value of the rations underdrawn; so that means be thereby provided of furnishing refreshments and extra comforts for those who are sick, without incurring expences exceeding the value of the regular ration which is understood to be the soldier's property.—The method of subsisting the sick in hospital now stated is simple and effective. It is not a visionary suggestion; it has been tried and proved in practice. The plan was adopted at St. Domingo in the year 1797; and it was more decidedly proved in the treatment of the Russian auxiliary troops in the year 1800, during their cantonment in the islands of Jersey and Guernsey. It shuts the door effectually against abuse; it implies no provision of extra means in the army estimates on account of hospital expences; and, as it preserves the movement in the regimental channel, or what is similar to the regimental channel, it is direct and effective of the military purpose; consequently it must be regarded by every one, who considers the subject in its reasons, as the true arrangement for hospital purveyance in the scene of actual war *.

The next point in the detail of economical administration relates to estimate of expence, in-

Estimate of
expence.

* See Note C.

curring on account of the means of common subsistence and extra refreshment required for the purposes of the sick during the period of their confinement in hospital. This amounts to a prodigious sum in the general hospitals of the British army; and in this case it is necessary to find a rule according to which the quantity may be adjusted, and the effect judged. The diet-table is the instrument constructed for the purpose of forming a just calculation of consumption: reference to it is indispensable as a guide to direct distribution; hence, as it is the groundwork of calculation for estimate in one case, so it is the criterion which leads to form judgment of effect in the other. The form of diet-table, annexed to this work, exhibits the different scales of diet as calculated for the different classes of sick or convalescent. It fixes kind and quantity for each. This being done; and, the market price of the consumable articles being stated, the cost of a diet of each form is known precisely; the expence of subsisting one man in hospital or any given number of men is discoverable by an easy calculation. The middle scale of diet may be assumed as the diet of average expence. When the number of persons standing in each scale of diet in military hospitals is balanced, or nearly balanced with each other the supposition is sufficiently just: hence it may be added, as proceeding on this ground, that, when meat (beef, mutton or veal) is

bought for six-pence per pound, bread for three halfpence, oatmeal and barley for two-pence, rice for four-pence, sugar for one shilling, tea for six shillings, potatoes, greens, turnips, carrots, &c. for one farthing, milk for two-pence per pint, the amount of the value of the daily portion of low diet, including the expence of medicated drinks and gruels, falls within six-pence; the value of the full diet amounts of eight-pence; that of the middle diet may be fixed at seven-pence. Hence, if the proportion among the scales of diet stand as it is supposed to do, seven-pence, as the value of one portion of the middle diet, is assumed as the average estimate of the expence of breakfast, dinner and supper for the whole according to the forms of diet annexed. If seven-pence be the average money estimate of the diet, and ten-pence the sum paid into the hospital fund on account of hospital subsistence and other expences of entertainment during illness, the sum of three-pence per man is left at liberty for the purpose of providing extra refreshments of diet, for defraying the expences of washing, for paying the wages of nurses and attendants with the cost of their provisions. If sixteen attendants, including attendants of all descriptions, be the requisite number of servants for the hospital which contains one hundred and sixty persons, the rations of provisions, estimated at nine-pence, amount to twelve shillings, the daily pay to eighteen shillings, allowing

two shillings per day for the steward of provisions, eighteen-pence for the steward of linen and the receiving officer or porter; the daily expenditure of provisions, by the detail of the diet-table, amounts to four pounds, thirteen and four-pence—the whole expence to six pounds, three shillings and four-pence. The amount of the stoppages is six pounds, thirteen shillings and four pence; consequently there remains the sum of ten shillings—to be applied in the purchase of soap for washing, for the procuring of refreshments and extra comforts for the sick. This, it must be confessed, is but a small sum where comforts are dear and wants numerous. It does not admit of profusion; but it will be found, with good management, to be equal in most cases to the supply of what is needful. It is to be observed in this place, that surgical patients and the higher order of the convalescent class rarely require any addition to the diet of the common table; consequently this class calls for no contingency or extra allowance in the view of forwarding the recovery of health. And, while this is the case on one hand, it is farther to be added, as additional means of augmenting the fund allotted for the procuring of extra comforts, that, as it is useful in a medical point of view that surgical patients, and, in many circumstances, those who are recovering from acute disease, be restrained for one day in the week from the use of animal food, so, as animal food

is known to be the dearest part of the hospital ration, the regular expence of the customary diet-table suffers a considerable diminution by the operations of the change proposed. The extra refreshments and comforts, which are ordered for those who are not capable of consuming the ordinary diet, or, with whom the ordinary diet does not agree, are probably more expensive than the usual fare ; but while this is so, it is to be remembered at the same time that the extra expence is not wholly an augmentation. If one thing be added, another is withheld ; so that there is change in quality, rather than addition in quantity. The various refreshments and cordials ordered for the use of the sick, as wine, porter, ale, or spirits of various kind, are supposed to be given only medicinally. Though they are called for by many in prejudice of education engendering a bad habit, they are useful only to few. The military physician who knows his duty, and who has courage to execute it in all its parts, orders extra refreshments for none but such as are unable to consume the grosser aliments, or who do not move on progressively in recovery without some extra aid of stimulation. It is a well-ascertained fact, and, from its importance, it deserves to be widely published that the act of moving sick persons through the open air—in proper conveyances, or, of washing and bathing a languishing and exhausted subject with warm and cold water alter-

nately, restores the animal powers to their wonted vigour more speedily and more securely than choice viands and costly wines. Where the former are attainable they ought to be employed, for they are cheap and effectual; where not attainable, or where not suitable to the case, stimulating diet and cordial wines are resorted to as accessory aids. The sum reserved for this purpose must be allowed, according to the calculation which has been made in this place, to be adequate to the supply of all the necessary means of comfort, which the ordinary circumstances of sickness require. But, though it is believed that the residue of the stoppage, made from the soldier's pay on account of hospital subsistence, will prove sufficient for the supply of all necessary articles of refreshment for the more feeble part of the sick, after the average expence of the hospital ration, the expence of washing, the expence of provisions and wages for hospital servants is defrayed; yet, if instead of defraying the whole of the expence incurred by the attendants on account of wages and provisions from the sum detained from the soldier's pay, the orderlies and servants of the economical department receive regimental pay and a ration of provisions, as is customary in military hospitals in actual service, the addition to the regimental pay of the orderly employed on hospital duty being only three-pence per day, instead of one shilling, the surplus must be held to

be ample for the purpose proposed, under every condition of disease which can well be supposed to occur.—Such is the rule of calculation; it has been tried and proved under the most untoward circumstances of disease to which the military body is liable. In the year 1801, the diseases, which prevailed at the army depot in the Isle of Wight, were singularly aggravated in their character, requiring a greater quantity and variety of refreshment than is usually found to be necessary in military hospitals; yet the sum of nine-pence halfpenny per man was found to be sufficient to defray the expences of subsisting the patients, of paying the wages and furnishing provisions for servants of all descriptions—in a correct, even in an ample manner: the materials were all of the best kind, purchased at a market on the spot; the bills paid weekly,—and the account acquitted.

If the plan detailed in this place be duly executed in all its extent, the annual saving of expence to the public, as compared with what obtained till lately in regimental hospitals, and what perhaps now obtains in general hospitals in Great Britain, must necessarily amount to a large sum. In the case proposed, the sum detained from the soldier's pay defrays the expence of the soldier's subsistence, the expence of washing, also the expence of orderly care and nursing. The sum, detained from the pay of the soldier while sick in general

hospitals, was four-pence during the American war; it rose to six-pence in the course of the late war; and it now stands at ten-pence. As it is applied to the purpose of providing food and refreshment in hospital, it is fair in reason that it be equal to what is contributed to a similar purpose in camp or barracks: and further, as the soldier pays for the washing of his linen from his own funds while in health, it is no more than just to the public that his pay be assessed with a sum equal to answer that purpose, when he is sick. This cannot be estimated lower than at one penny per day for each man; for persons who are confined to the bed of sickness, particularly those who suffer from acute diseases of a contagious character, require frequent changes both of bed and body linen. It is just, even indispensably necessary for the public good, that a balance of right be preserved among all the different parts of the community, that a sum which is sufficient, but not more than what is justly sufficient, be detained from the soldier's funds for the effecting of purposes which personally belong to the soldier. If a state be profuse, giving without measure, it becomes bankrupt; for no regular and adequate return of benefit is produced by that which is bestowed:—the act moreover saps the foundations of the military virtues, and brings the military fabric to early ruin. If it be parsimonious, it is equally in error. Parsimony, which is a distribu-

tion below just measure, engenders disgust ; the useful action is starved, or permitted to stagnate in want of stimulation. The golden rule lies in the middle : formed with knowledge of things, it produces and maintains action and re-action in vigour and permanence by balancing cause and effect justly. It has been tried repeatedly and proved in experience demonstratively that it is not only possible, but easy, under the guidance of a correct economy, to furnish every kind of food, refreshment, personal care and attendance, which the occasions of sick men require, without incurring any addition of expence above what is implied in the customary stoppage. If the proof of this assertion be demonstrative, it is essential to the good order of the army and the permanence of the national prosperity that it be carried correctly into execution. As the subject has not met with due attention in the medical system which has been acted upon of late years in the British army, it may be thought necessary to explain in a few words how the matter stands. When the hospital stoppage amounted to no more than six-pence per day, the markets high, or at the rate at which they now stand, there existed a necessity of giving a power to the surgeons of regiments to bring in a contingent charge, not only on account of refreshments, but even on account of a just quantity of ordinary food for the subsistence of hospital patients. This, in regiments probably not ex-

ceeding five hundred men, was said to amount annually to the sum of three hundred pounds; in many to six. The average daily expence of subsistence in food and refreshment for patients in the general hospitals was said to be half-a-crown or more. This statement is not vouched to be perfectly correct. The correct fact may however be known by those who have authority to refer to the hospital books. It follows, in the supposition that the statement is true, that, if fifty regiments be stationed in Great Britain, the lowest annual hospital contingent account for a regiment during the period alluded to being three hundred pounds, the total amount of the regimental hospital contingency stands at fifteen thousand pounds per annum. This is a large sum, particularly when it is known that the hospital purposes of a like number of corps, previous to and in the earlier periods of the late war, were accomplished satisfactorily for the annual sum of fifteen hundred pounds, that is, at the rate of thirty pounds for each regiment. If the average expence of a sick man's support in general hospital be laid at half-a-crown per day, the annual expence of the subsistence of one hundred men, after deducting the amount of the hospital stoppage, is three thousand six hundred and fifty pounds. Hence, if the practice of collecting the military sick into the general hospitals which are now established in England be adopted, the expence, incurred as a

consequence of that measure, must amount to a prodigious sum. The sum is large; and what is material in the case, it may be considered to be proved demonstratively that it is so much wasted, if not worse than wasted. The sum of ten-pence per man is proved in every fair trial to be equal to the provision of every necessary article of food and refreshment, even equal to defray the cost of care and nursing, according to the plan recommended in this place, even according to the plan now acted upon regimentally through the whole extent of the British army in England. The money to be allotted in the army estimates as hospital expences is thus supposed to be confined to the original cost and occasional repair of furniture and equipments, the cost of medicines and salary of medical staff,—with some extra expence in fuel and candles. The common expence of subsistence and attendance is defrayed by the deduction made from the soldier's daily pay, during his confinement in hospital; which, in order that things be justly balanced through all parts of the service, is so calculated as to be equivalent to the expence which he incurs on account of messing and washing while in barracks or camp:—his condition as a soldier is thus relatively preserved, his needs in health or sickness principally supplied by his own means*.

* See Note D.

Exhibition
of accounts.

The management of hospitals implies a stewardship responsible for the application of means to purpose. Whether the hospital be supported by permanent and fixed funds, by casual charitable contributions, or by assessment of the property of the patient, the transaction, as a public transaction, is still to be examined, controlled and acquitted. The assessment of property obtains in military hospitals : for there, a part of the soldier's daily pay is deducted and detained on account of food, refreshment and personal cares,—the amount, such as is judged to be sufficient for the needs. As it is implied in the fundamental rules of the establishment of military hospitals that the sum detained from the soldier's pay, on account of the soldier's support when sick, be applied to its just purpose with care and judgment, so it is necessary to shew that this is done correctly : hence the exhibition of hospital accounts. It is indispensable, in submitting the accounts to inspection for judgment, that the statement be arranged systematically, the process exhibited clearly, the means and the effect contrasted and balanced with each other in such manner that the connexion may be perceived on the first view, the correctness and truth of the operation so exposed as to be evident to the dullest apprehension. If the care and entertainment of sick persons who are received into hospitals be an act of charity, entirely gratuitous, the patient himself may not

be supposed to be entitled, in such case, to turn his view upon the application of the funds which are so benevolently appropriated to his support : if, on the contrary, the entertainment be purchased by an assessment of his property, it is just, and, it may not perhaps be thought to be improper, that he himself be furnished with some means of judging of the application of the sum with which his property is assessed. Human nature is jealous of its rights ; it is even suspicious of the imposition of wrong : hence it is prudent, wherever it can be done, that no suspicions of misapplication of means be suffered to attach to public functionaries. The sentiment is common, and the suspicion is liable to attach to the management of military hospitals supported by deductions from the soldier's daily pay. There is a common contribution in this instance, and it is just, in fair reason, that a statement of application be fairly exhibited for the joint information of those who contribute. But, as observed just now, in order that this be executed clearly and correctly, it is necessary that the accounts be arranged after a simple form ; and that it may be done easily, it is desirable that they be condensed into a narrow compass.

The diet-table is the principal instrument employed in exhibiting and explaining the operations of the economical management of hospitals, particularly in vouching and supporting the state-

ment of hospital accounts. It embraces the expenditure of all matters of diet and refreshment: as such it embraces more than two thirds of hospital expences. As it is important in its nature, it is necessary that it be correctly arranged according to an instructive form, and that it be simple in its construction, so as to exhibit the useful explanations at one view. The preparation of the usual form of diet-tables for military hospitals, comprehending a catalogue of names as well as quantities of diet individually detailed, implies a great deal of writing in the first act, with a great deal of care in the subsequent steps in order to ensure such form of execution as must be deemed correct. As the diet of hospitals, in which diseases fluctuate in quality of their nature, is liable to be changed at frequent, but uncertain intervals, it is plain that, unless a new table be constructed daily to correspond with the fluctuating changes of disease, the effect, as connected with the diet-table, will be preserved with difficulty from degenerating into error. The table of every new day admits of alterations in various places, particularly in wards occupied by persons in the acute stages of fever; consequently the amounts will not be easily seen, nor readily condensed for the exhibition of expenditure, where such changes occur in a weekly diet-table constructed with nominal detail implying many lines and many figures. Such chances of error or mistake are

numerous in the form existing; they are precluded in the plan adopted by the author, and now recommended to the notice of those who are intrusted with the direction of hospitals. The first step in this process consists in classing the sick in separate apartments according to the nature of their diseases, or their progress in recovery, allotting and apportioning the diet according to the respective conditions, simply noting the number of the patients in each class of diet, instead of writing names and detailing the scale of diet of each individual patient. The useful purpose is thus attained, and three figures signify as much in this case, as three hundred names and three hundred figures in the other. It is plain that the operation of the medical principle, which classes the sick in the manner stated for a medical purpose, produces a new diet-table daily as a result of classification. This is done without any effort of labour or waste of time; and, what is of more value, it is done with a degree of correctness in execution otherwise not attainable. The enumeration of diets of different scales, certified by the medical officer to be the correct return of the strength of the hospital, is to be considered as authority for requisition. It is the voucher of ordinary expenditure; an extra order of similar authority, implying a specified purpose, is produced for what exceeds or what is altered from the usual rule. This forms the routine of hospital

economy and constitutes the groundwork of hospital accounts*.

It may seem to be superfluous to insist so much upon the usefulness of the process recommended. The rule of classing the sick in their wards according to diseases and conditions of disease, of numbering diets of different scales, rather than of writing names of individuals with diets individually detailed, is obviously easy and correct in practice; but, easy and correct as it is, it does not yet appear to be adopted generally in British military hospitals. As no writing of any extent is implied in detailing the quantities of diet in the case recommended, so no clerk is required to be salaried for a superfluous purpose. In the case existing, a provision of clerks is indispensable for the preparation of the diet-table: and the labour is considerable, for being a complex instrument, it is kept in order with difficulty. When formed after the common manner with a catalogue of names and variety of columns, as the task of preparation is tedious and operose, so one diet-table is usually calculated to last for seven days. As the same person does not always, probably not often remain for seven days together in the same condition, requiring the same kind and quantity of diet, particularly in cases of acute disease, there

* See Table N° XIV. at the end of this Chapter.

consequently occurs a necessity of making changes in the table. A new name is to be written, a new column to be opened; hence arises a facility of falling into error, even a difficulty, where figures and columns are changed, of detecting error when it is committed. In the other case, the daily requisitions for meat, bread, &c. express the number of diets on each scale; a note or figure of extra order, when extra things become necessary, expresses the whole amount of the wants. The requisitions certified by the signature of a medical officer of authority mark the quantities; the order of classification adopted specifies the detail of application. The requisitions for meat and bread mark the outline of the different diets; the quantity of milk, tea, sugar, barley, oatmeal, rice, &c. follows the rule of the respective scale to which the subject belongs. Wine, porter, ale, cyder, spirits, fruit, and the various other refreshments are extra—ordered for a purpose, and sanctioned to be necessary for such by the signature of a medical authority. Milk, meat, bread, and pot-herbs are provided daily according to requisition; liquors and other materials, which do not lose their virtues by being lodged in storehouses, are provided in quantities calculated as near as possible to meet the consumption of the week: hence it is useful to form an outline of calculation on this head, so that the accounts may be settled weekly,—either net, or with the smallest possible

balance. The facility of executing this useful arrangement supposes the market or depot of stores to be upon the spot, or within a short distance of the hospital or depot of sick. It is understood in all cases that the certified requisitions alluded to are just authority for purchase, or for drawing supplies from the commissariat magazines : proof of delivery to the receipt of the steward is warrant for payment, or deemed a valid voucher for comptrollers at any future period of settlement. The rule of purveyance, arranged after the manner stated, furnishes a correct form for business, so guarded as not to be likely to degenerate into error ; the management so executed will sustain itself under any examination that can be instituted, for it is properly supported by authorities in all its parts and details. The application to purpose is ensured by the established discipline of the hospital ; the verification of the fact is under the cognizance of the chief medical officer : ascertained by actual knowledge (for he is supposed to be present on the spot), it is certified by the faith of his signature. The table of diet,—common and extra, forms, as has been already explained, the grounds for requisition as expressive of the wants of the sick in hospital ; the estimate of expences of attendance, viz. provisions and pay for servants, expences of washing, &c. is made according to a fixed rate for numbers and quality :—the detail is exemplified in the proper

Table *. The various wants of the sick in hospital being furnished as now stated in correspondence with authenticated requisitions, the means, procured by the requisition, ascertained to be applied to the purpose by the authenticated signature of the chief medical officer, who is responsible with his faith and honour for the correct performance of this and every other part of his duty, the detail of expenditure with reference to money value is then exhibited after a simple form, arranged in order and condensed into a narrow compass, cause contrasted with effect in such manner, that the whole of the process is exposed at one view, the simplicity of the example and position of the contrasts taking away altogether, at least diminishing materially such chances as might be supposed, without such rule of exhibition, to allow errors to escape undetected. If the expression be thought obscure, a reference to the form of the money account † explains the matter better than it is capable of being explained in words.—The regular account of the daily expenditure of hospitals, including diet and refreshments, expences of nursing and washing, is separated from the contingent or accidental account. This is done for the sake of greater clearness and pre-

* See Table N° XVI. at the end of this Chapter.

† See Table N° XVII, ditto.

cision, so that the value of every necessary be estimated on its own grounds. The contingent account in military hospitals comprehends various articles of clothing for hospital uses, viz. hospital dresses, gowns and trowsers, shirts, night-caps and slippers. The cost of these may be supposed, in justice, to be chargeable to the account of the soldier, if the amount of his funds be capable of embracing the provision of such comforts. They are provided for saving the tear and wear of his clothes, which are his own property : hence the surplus of the hospital stoppage, if any exists, is justly and usefully applied to his uses according to the rule prescribed *.

Constitu-
tion of the
power of
control for
hospital ac-
counts.

The accounts of hospital expenditure being prepared and exhibited in the manner which has been shewn, the next step in the process relates to the best mode of examining and judging of what has been done. The first part of the subject, for it is double, regards the constitution of a power capable of executing the duty with effect—and consistently with the spirit of the military system. Whether this power be vested in one person or in a body of persons, it is necessary that it be vested in those who are competent in knowledge to discharge the office with ability, and who, pure in themselves, are rigid in judging the purity of

* See Note E.

others: knowledge and integrity are thus the indispensable qualifications of the controller of hospital accounts. The military physician or military surgeon orders the means which are required for the uses of the sick, verifying the application, according to the forms prescribed, as a part of his duty. The purveyor appears in the light of a steward acting by order, bound to exhibit a statement of his actions authorized and supported by the official testimonies of accredited professional officers. The medical officer is here the chief executive authority, unrestrained in the use of means, but liable to shew cause for the necessity and propriety of his actions. The discretionary power granted to the physician is implied in his supposed fitness for his office,—a fitness necessarily ascertained by suitable tests previous to appointment to a charge of so great importance as the care of the health of an army. He is the chief executive authority in the case under view, and, as such, it is a solecism in common sense to suppose that he can be constituted a member of a board of control, and pass judgment on his own acts; consequently he is only admitted to be present at the examination alluded to for the purpose of explaining cause, or verifying fact. He can neither be permitted to examine nor acquit: hence, as medical officers, acting as physicians or surgeons for hospitals, cannot be sustained as persons admissible to examine and ac-

quit hospital accounts, and, as hospital accounts cannot be adequately examined, controlled and acquitted, except by those who have correct knowledge of transactions from personal inspection, the duty naturally and necessarily devolves upon the military officer immediately commanding on the spot, viz. a general for the examination and control of general hospital accounts, a regimental commanding officer for the examination and control of those of regiments. It is obvious to every one, who considers things in their just relations with one another, that it is in the military channel only that the means competent to examine and acquit the accounts in question are to be found. It belongs to those alone who are actually present in the scene of action to attain correct knowledge of the fact; and, according to the fundamental constitution of armies, it is embarrassing, even subversive of principle to give chief authority, even in the economical concerns of armies, to others than military officers. The military officer must thus be supposed to be the chief of the military force in all its relations; and, on this ground, all the matters which relate to that body, whether in the field or in quarters, in health or in sickness, must necessarily be understood to come under the eye of him who commands on the spot, whether a person of general's rank, or inferior officer commanding a regiment or detached corps. If the subject be viewed dis-

passionately, as connected with general reasons, it is visible at first sight that no other authority, besides the military authority immediately intrusted with execution can be permitted with safety to interfere in military concerns: no other can be constituted a controlling authority in the subordinate actions of the military body, without originating a counter-action which cannot fail to be injurious to harmony, or an impediment to effect. Hence it follows that the inspection of general hospitals, the examination and control of hospital accounts are points naturally and directly comprehended in the duty of the general, or other military officer commanding at the station of the hospital. The correct performance of the hospital duty relates to the soldier; and, that which relates to the soldier cannot, at any time or under any circumstances, be deemed to be indifferent to the officer, whatever may be his rank or condition: the verification of fact belongs to his situation as personally present; the knowledge to exercise economical control does not exceed his ability as a man of common sense acquainted with common business. Such being the case, it cannot be transferred to others, without incurring a risk of direct injury to the public service.

It may seem to be extraneous in the opinion of some, it may even be deemed presumptuous in the opinion of others, to touch upon the subject of

what is right or wrong in the great economical arrangements of the military body; but, as it is highly important to preserve the hospital concern in consistent and harmonious movement with the military system, and, as there appear at present to be some symptoms of aberration from the military channel in the mode instituted for the control of hospital accounts, it will not be deemed impertinent or misplaced on this occasion to submit the point to the higher powers for consideration, that the method recommended, and that now followed, be examined impartially in their reasons, as standing independently on their own foundations. It will not be denied by any one that it is a fundamental principle in the formation of armies, never to permit the soldier to be withdrawn from under the eye, or placed out of the protection of the military officer in any of his concerns, as the military officer can never be supposed to abandon, or to have grounds to abandon the soldier's affairs in their full and entire extent in any situation in which he may be called to act. The connexion of these persons is intimate by constitution; it is political and wise that the intimacy be cherished carefully by practice. The physician restores the sick soldier to health; the military officer witnesses the process; he is in some degree master of the means; and he is judge of the effect. As the officer and soldier act and re-act in their relative situations by near or immediate contact, it is dangerous and

unwise to interpose bodies between them which have the chance of loosening connexion, by the appearance of diminishing authority on one part, or of weakening the ties which interest the mind on the other. It may therefore be admitted on this ground of reasoning, that the introduction of a foreign control, in the economical concerns of the sick soldier, is not well judged. It serves to remove his eye from the person whom his military station leads him to consider as his proper guardian; and, in doing this, it implies some deficiency in his guardian's qualifications, which his duty as a soldier obliges him to consider as consummate. But while the officer is thus lessened in the eye of the soldier; the soldier, on his part becomes an object of indifference to the officer. When he disappears from the duty list, he ceases to occupy the attention or interest the mind of his captain; when restored to health, so as to re-appear on the parade, he is estimated only in the light of a repaired mechanical tool. It is evident that the operation of the measure, now alluded to, has a tendency to weaken the connexion between officers and soldiers as founded in affection; as such, it weakens the effect of the military machine in action. This truth, however obscurely expressed, will be understood by old officers, who know the character of soldiers by experience, and who know to appreciate justly the value of possessing the

soldier's confidence, and the extent of the evils which arise from his indifference or distrust.

As the connexion of the officer and soldier is constitutionally intimate, and, as brilliant actions in war are the offspring of their mutual attachments, it is implied among the provisions of a just military arrangement that the bond of union, instead of being weakened or dissevered by the interposition of foreign things, be strengthened by accessions from all the conditions which the varieties of military service present. Among these none is more important than that which is connected with the history of the sick soldier during his confinement in hospital. There is no act of man's endeavour, which gives so much satisfaction and conveys an impression of so much consequence to a thinking mind, as that of raising the invalid from the bed of sickness to the vigour of health. It is a species of creation and an important source of pleasure in itself. This is felt in all situations; but it is felt most strongly in armies: the sensation is there strong, and the act generates a train of movement in animal organism which rivets the affections of the soldier to the beneficent officer more strongly perhaps than the effect of any other causes which act upon man. This is no loose assertion. The fact is often witnessed in experience that the officer, who, regarding the sick soldier as a part of him-

self—and not a mere tool for labour, imparts comfort with the sympathy of a brother and friend, succeeds in planting a stock of affection, which, growing with returning strength, manifests its power in danger,—and shews itself invincible in the day of trial. It is observed in almost all conditions of human nature that man is capable of receiving the impression of generous sentiments; the simplest and most honourable natures are the most susceptible. The soldier, for the soldier is not understood in this case to be selected from the refuse of the earth, is susceptible of the better impressions,—easily induced to follow by affection: he often refuses to be driven by fear. If the sympathies of the soldier's mind be rightly prepared and skilfully touched when moved into action, the movement is in unison in all its parts,—the effect irresistible in power. It is thus that the officer, who visits the sick soldier in the hospital apartments, administering relief with interest and kindness, rarely fails to inspire a sentiment of gratitude and to cement an attachment, which warrants him to calculate on a return of exertion in times of danger. The soldier, who is comforted by the words of friendship as he lies feeble and dejected in the hospital bed, gives energy to his arm in the field when restored to the vigour of health, conquers as a hero, or falls by the side of his officer and friend,—his wounds in front and his face towards the enemy. Hence it

follows that, as nothing gives a stronger warrant of the soldier's good conduct than affection and attachment to his officer, so nothing is more important than the study of officers to cultivate the soldier's affections; and, as affection is not so readily and so strongly engendered by any other cause as by acts of attention in times of sickness, it is to be hoped that no causes will be interposed in the management of the soldier's hospital concerns, which have a tendency to weaken or diminish the bond of connexion between persons, whose intimate union is so essential for the attainment of the effective duties of the military station. In this manner, if the military officer, who is the protector of the soldier's rights in common circumstances, be permitted to be the guardian of the soldier's property and judge of the application of his means to his own uses while sick in hospital, it is to be supposed that he will be induced to view the subject in its true light, and, viewing it as he ought to do, qualify himself to execute this part of his duty with becoming knowledge. The execution of it does not lie beyond the reach of his attainment: its forms may be so adjusted, as to make it level to the comprehension of any man of common sense.

The execution of the duty of verification and control implies some personal trouble, and it supposes some knowledge of common business; for

it belongs to its character to form opinion, and to pronounce judgment on the execution of the hospital stewardship. The control of the hospital account does not relate merely to the act of summing up and striking a balance in the figures of the account; it enjoins a personal inspection and verification of statements—by evidence taken on the spot. Hence, if control be any thing more than a name (mere operations with figures are literally no more), it is understood that the commissioners of control, of whatever denomination they be, are bound to inspect the state of the hospital correctly, to examine the quality and the cookery of provisions, to open their ears to complaints on the part of the patients, to substantiate their truth, or to evince their refutation by public proofs, previous to the examination of the money account, either to certify its correctness or to detect its errors:—there are then sure grounds of just proceeding.—If the articles of hospital consumption be furnished by purveyance at the common market, the prices, as well as quantities, are specified in the bill of parcels; the quantity and kind of each man's consumption is stated in the diet-table according to the rate of classes; hence, the amount of the expence in money of one man or of the whole is known precisely. If, on the contrary, the articles of consumption be supplied at the commissariat store as a commuted ration, the estimates of the relative values having been made

previously and sanctioned by authority, the quantity received and consumed is ascertained, the balance, remaining due, noticed and certified ;— by this the transactions of the week are acquitted. The examination of hospital accounts comprehends a verification of the number of diets in the different scales, as certified by the daily returns of hospitals. The quantity of each species of provision allowed for a diet of each class is precisely known ; and, if the amount of extra orders with notice of specified purpose be added to this, the just expenditure must be allowed to be brought under the eye with an authenticated voucher, valid in all cases and exempt from further control. Such exhibition must be considered in the just reason of things to be final ; for it verifies the application of means to purpose by the authority of the physician or surgeon which is sovereign, as depending on the exercise of their truest judgment acting from the dictates of a pure conscience : certified to be just and correct, it is acquitted by the military officer, and the record of it is extinguished.

What has been hitherto noticed relates to the accounts of diet and refreshments. The expence of washing, supported by its voucher of kind and quantity, the expence of the establishment of nurses, orderlies and economical servants for provisions, according to the established regulation,

and for pay, according to the pay-list acquitted, complete the account of the regular expenditure for military hospitals, whether general or regimental. The contingencies are irregular and uncertain, and, on that account, they are arranged under a separate head. Authorized by a particular order, and certified to be applied to a particular purpose by official sanction, they are sustained on the plea of usefulness or necessity; and therefore valid:—they embrace those expences only which are contingent and accidental.

The examination of hospital accounts referred to in this place is supposed to be made weekly, necessarily the first day of the new week. The materials, which relate to the transactions of the week that is past, being previously arranged and reduced into order, the view readily fixes itself on the points which deserve consideration. If the business be duly methodized, the whole process, even in large hospitals, may be executed correctly in the space of one or at most of two hours; in regimental or small hospitals, the purpose may consequently be accomplished in less, for the examinations, previous to verification, are necessarily shorter.

It is sometimes difficult, under the contingencies to which military service is liable, to find proper military persons in whom to vest the con-

Manner of
control de-
tailed.

trol of the accounts of general hospitals. General hospitals, as the receptacles of persons who require repose, are necessarily removed to a distance from the scene of active war, consequently they are rarely within the bounds of the inspection of the general in chief. But, though placed at a distance from the head quarters of the army, they are generally established in or near towns which are considered as secure, and as such probably selected for the depot of stores. As it is not unlikely that a military officer of general's rank will be stationed at a position so important as the general depot of military stores, where in all probability the general hospital is established, and, as the proper official control of hospital accounts, comprising inspection, examination and verification of fact, cannot be executed with truth, except by a person who is actually present on the spot, and, as such, acquainted with all the circumstances of hospital economy and management, so it is obvious that this duty devolves directly upon the military commandant of the station alluded to. He may be assisted in execution by the officers of his staff; and, if the provisions be drawn from the commissary's store, the commissary of the station must be required to attend as the contractor, for the purpose of giving the necessary informations on doubtful points.—The examination in question is supposed to be instituted weekly, the transaction acquitted at the

end of every week. The acquittal is final, for the purpose is distinctly specified—cause and effect correctly balanced and judged. This is plain and easily understood: it is however proper to add, that though the accounts be settled and acquitted at the periods stated, it will be further useful, as serving to render the action complete, that an abstract report of the money concerns of the sick be made up at the end of every three months; that the detail be published and publicly acquitted by the authority of a general order at such time, as thereby furnishing a satisfactory explanation to the soldier of the appropriation of his funds, viz. the amount of the hospital stoppages, detained on account of a given number of men during a given period, balanced by verification of the effect produced. This relates to the mode of managing the economical part of the business of general hospitals, where a general officer is supposed to be the commandant of the station and controller of the money accounts of the hospital;—the rule of control for regimental hospitals moves in a similar channel. The regimental hospital is supposed to be inspected formally on the first day of the new week by the field officer or officer commanding for the time, assisted by one captain and accompanied by one subaltern. When all things are ascertained to be correct, the hospital-subjects giving their testimonies of satisfaction, the officers examining

and verifying the condition of the provisions and the order of economy and management; the money stoppage, as certified by correspondence with the daily returns of the hospital strength, is summed up, and the amount is certified. The money expended on account of subsistence, &c. as vouched by diet-tables and extra orders of authenticated authority, is also summed up, the amount ascertained and stated per contra: the balance is struck, and the account, being certified to be correct, is then acquitted. The surgeon, who is the executive authority, exhibits, or rather directs the exhibition of the statements, explains what may appear to be obscure, verifying the application of means to purpose by explicit evidence. When the hospital stoppage is fixed at ten-pence, and the rate of the soldier's provisions such as it now is, it is not improbable but that the amount of the hospital regular or daily expences will fall considerably within the amount of the stoppage made from the pay on account of hospital subsistence. As the money detained from the soldier's pay, on this account, is soldier's property, the soldier may seem in justice to be entitled to information respecting its entire and correct application to his uses. In order to gratify this reasonable expectation, it is proposed that a committee of the captains of the regiment (for captains are public accountants and guardians of the soldier's money concerns), the commanding officer presiding, be formed, at the end of every three months, for the

purpose of revising the statement of the hospital balances, and of directing the appropriation of the existing surplus to its just uses. It will be attempted to be denied by no one, that the residue of the money, detained from the soldier's pay on account of hospital subsistence, belongs to the soldier, after the expences of his entertainment under sickness are defrayed. This is an admitted fact, and, as such, it is not unreasonable to expect that the soldier should wish to have the satisfaction of knowing in what manner his own property is applied to his purposes. The supposition implies a fair rule of justice and equality between man and man; and it is necessary that the testimony of the justice here exercised, be made public for the information of all the parties concerned. The instrument, through which this purpose can best be executed, is the regimental orderly-book. This is the official record of the regiment, open to all the members of the corps, and the channel through which all the soldier's concerns are explained. It ought therefore to be expressed in regimental orders at the end of every three months, that the hospital accounts, which have been examined weekly, certified to be just and correct throughout, are credited with a balance of a specified amount, the surplus of the hospital stoppage not expended in the ordinary support of the sick, who have been treated in hospital during the above period. The amount of the sum, which remains unapplied, being stated,

the application, by a decree of the committee, is directed to be made to the soldier's uses according to the recommendation of the surgeon, who is the proper judge of the hospital wants: for instance, it is applied in the purchase of hospital dresses, shirts, night-caps, and slippers, the number and cost so correctly calculated as to leave the accounts exactly quit—without balance for or against. The articles of hospital clothing, now stated, save the tear and wear of the soldier's clothing which is his own property: they thus save his means; and while they do this, they add materially to his comfort, during his sickness, which contributes to his good. He cannot, therefore, have any cause to complain of the mode of application of the surplus balance now recommended on one hand; and he has demonstrative evidence on the other, that, whatever is his own, is faithfully applied to his own use and benefit. The order here alluded to does not suffer suspicion of embezzlement to enter his mind relative to his money concerns; an effect to be guarded against carefully; and which those, who know soldiers, know to be sometimes produced on very slight grounds.

The mode of exhibition and examination here stated must, in reason, be allowed to constitute the only proper mode of examination and control which is capable of being applied to hospital ac-

counts, whether general or regimental. The execution may be thought by some to be troublesome at the time ; but it is accompanied with immediate good ; and it saves the state from a great deal of loss, and auditors of accounts from a great deal of labour. It is no more than just that every thing which belongs to the soldier be applied to the soldier's uses ; and, while this is done, it is politic and wise that the knowledge of what is done be explained publicly. The soldier cannot know the truth without information ; he will even be disposed to believe in error, unless the statement of the fact be expressly detailed, the effect produced vouched in regimental or general orders as an ascertainable truth. As the military hospital is supported by contribution from the pay of the soldier in the case supposed, the expence is the soldier's own ; the statement of the transaction is his due ; and quittance from responsibility requires no other record, than verification on the spot, by competent judges, that the whole detail is correctly executed according to the sanctioned system of management. It does not come under the cognisance of commissioners of public accounts ; for the hospital expences being defrayed by the soldier's own funds are not comprised in the extraordinaries of the army. If the rule recommended in this place be adopted and correctly adhered to in practice, the economical concerns of hospitals will be simplified, abuse will be

precluded, and effect ensured with a degree of correctness not yet witnessed in British military hospitals.

Futility of a formal control of accounts.

The control of accounts, and among others the control of hospital accounts, has occupied a good deal of attention of late years, produced a great many regulations and formal checks, calculated to prevent irregularity and protect the public against the depredations of its servants. It is much to be doubted whether or not the precautions have afforded the security which was promised. The action of the existing control centres in a formality. It is known too well that formality may be obtained without real veracity; and, it is known that, when obtained by fraud or collusion, it commands credence as truth. The controller requires a prescribed form, a correspondence of figures and signs. He is not qualified, perhaps, not entitled to go farther. He is most probably ignorant scientifically of the true nature of the subject, the money account of which is submitted to his examination and acquitted by his decision; or, remote in time and distant in place from the scene where the action lay, and where the fact only could be verified, his control cannot be otherwise than defective,—it stops short of the original purpose of his office. In this manner it is often nugatory; it is even sometimes worse than nugatory; for it tacitly points out the

way, under a provision of forms, certificates and affidavits, by which truth may be evaded and falsehood imposed upon the public. It is positively known that the forms alluded to, consisting of certificates and affidavits of the truth of certain statements, are obtainable without fact. When the form is obtained, in whatever manner it may have been procured, it is deemed valid; for the controller stationed at a distant place, or required to judge of actions of a remote period, has no certain and decisive means of detecting a fallacy: he believes, moreover, that the power of his control is confined to the simple business of ascertaining the correctness of the figures, and certifying the literal accuracy in the form of the vouchers. The propensity to error, particularly when error is connected with conditions vulgarly esteemed advantages, is strongly manifested in the actions of man; and, as the propensity to err is strong, so the difficulty of detection is great, where the mere transcript or representation only, instead of the thing itself, is submitted to examination for the decisions of the judge. This belongs to the case existing: it is weakened, or removed in the case proposed, where the fact itself, not simply the transcript, is submitted to the consideration of those who are appointed to control and acquit the public accounts. The examination is here supposed to be local and personal: the existence of the cause, and demonstration of the effect rigidly

substantiated, contrasted and balanced with each other. This process is supposed to precede the formal act of approval and quittance, in every instance. If the business be conducted in this manner, it is believed that it may be asserted, without even chance of error, that there is more reliance on the verification of a fact and quittance of an account by a military officer, who has the evidence of his own eyes for the existence of the fact, and the suggestions of common sense and experience for the direction of his judgment, than on the formal examination and control of official commissioners of professed knowledge of mercantile and money concerns, forming opinion from a paper exhibition of matters which have been transacted in remote times or distant places. A military officer, who is a man of zeal, honesty and common understanding, may be held to be a competent person to judge and control the details of military business which passes under his eye, and which interests his military character in consequence of its connexion with his duty. It is, for instance, comprehended within the circle of his duty to know every thing which relates to the economy of a soldier's life, the most wholesome food and the most suitable clothing. The money price of the various articles, which the occasions of the sick in hospital require, has a scale of relative value according to quality fixed by the rule of the common market; and, as the purveyance

of hospitals, if not comprehended in the instructions of the commissary-general, is supposed to be executed on the easiest terms by open contract, the military officer who commands a regiment, or who superintends a station where a general hospital is established, is understood to examine, directly or by confidential deputy, the specimens of supplies which are submitted for inspection, signifying choice of what is cheapest and best. His own understanding, with such experience of things as he may be fairly allowed to possess, without derogating from the importance of the military character, affords a better security to the public against imposition, in this case, than any that can arise from the exhibition of certificates and affidavits of merchants and tradesmen, though made before magistrates with all the formalities of office. It is obvious in this case that, besides the duty of actually inspecting the condition of the sick in hospitals, some knowledge of the relative degrees of quality and value of the ordinary articles of hospital consumption is to be considered as a necessary qualification for those who are appointed to examine and acquit the money account. The act of inspection is convenient to the military officer, and in the direct line of his duty; the knowledge necessary to enable him to form opinion is not beyond the reach of his comprehension. He may thus be regarded as the constitutional auditor of hospital accounts, quali-

fied to judge of the fact, that is, to estimate and balance cause, means and effect: the commissioned auditor is extra, appointed to judge, and capable of judging only of the transcript of the action: he verifies the correctness or error of the figures of the exhibited account; he gives faith to the report of others in what respects the actual truth of the thing; consequently his ground is fallacious, and his steps cannot be sure. It may be observed in illustration of this, that there is a higher and lower price among the commodities which are exposed for sale in markets, for, there is often a material difference in the quality of articles of the same name and description: hence, if the prices of the articles of consumption, as stated in the hospital account, be not higher than the highest of the market, notwithstanding that the quality may be the lowest of its kind, the transaction, as supported by affidavit, may bear a fair countenance in the eye of the auditor, and yet not be fair in reality. This is a case liable to happen at all times: it is a case, of which the controllers of accounts are no doubt aware, but to which they are not qualified to apply a remedy: not being ocular witnesses of the transaction, they cannot be supposed to form opinion, at least to pronounce judgment on the subject. Constituted as the office of control is, the execution of the duty, if intended to ascertain the real truth of the thing, and not simply its appearance, is sur-

rounded with difficulties and embarrassments which are not easily surmounted. The verification of the fact rests upon certificate and formal affidavit in the case under view ; but the accommodating affidavits of tradesmen do not always exhibit a scrupulous faith. This may seem to be a harsh and ungenerous conclusion : it is supported by too many examples ; it may be thought necessary to notice one in particular, as illustrative of the truth of the assertion *.

* During the great pressure of sickness which afflicted the British army on the continent in the year 1794, the stock of useful medicines was so suddenly exhausted as to call for a supply at the nearest market. A list of what was wanted was made out by the proper officer, and ordered to be executed by a druggist at Utrecht in Holland ; a supply of similar things was ordered from a druggist at Amsterdam, through means of an agent ; in opinion probably that Amsterdam, as the centre of trade, was the preferable place of purchase. The prices of the articles procured at Utrecht appeared to be reasonable ; the prices of the same articles procured at Amsterdam were nearly double ; consequently they were deemed to be exorbitant. There was here a case for comparison : the articles, similar in kind, were said not to be visibly different in quality ; yet the difference of price was such as has been stated. The Amsterdam account was sworn to before a magistrate, certified upon oath by burghers and merchants to be a just and reasonable account, the prices corresponding with the current prices of the market. It is thus that the Amsterdam account, vouched with perfect formality, exhibited strong grounds for believing an actual imposition. Formality was constituted the guide : it prevailed over the truth ; and the payment could not be resisted.—In a case

It is manifest, in a review of official money transactions or control of accounts, that veracity has often been and still is liable to be sacrificed to form. It is notorious that circumstances occur frequently in actual service, which bear hard upon the attainment of strict formal veracity in the matters which concern the purveyance of hospitals. Formal vouchers are required with rigour; and, as they cannot be obtained in all cases according to the perfect form, the wits of those concerned have been exerted to find out a remedy under the exigence. This discovers itself in the pliancy of certain friendly persons, who, lending their names as contractors, assume the privilege of furnishing the defective accounts with their vouchers, complete and perfect in all parts according to the form prescribed. It will not be doubted by those who have experience of the world that such things have been done. Let it be admitted that they are done in the first instance to cover a loss inseparable from the want of a correct official voucher for a true action; in other words, with honest intention in the main, or rather without intention of direct fraud, it still will be al-

of this kind, and it is probable that they are not rare, the auditors of accounts, without direct knowledge of the state of things locally, could not possibly be supposed to be capable of detecting the nature of the imposition or its degree; for the official forms of the account were complete and perfect in all their parts.

lowed that they are liable to degenerate, by repetition, into fraud and imposition, both intentional and real. The supposition of the existence of the practice tarnishes our opinion of human virtue; and the practice encroaches, in its least culpable form, on that sacred veneration for matter of fact, which keeps the course of man in the right channel, and which constitutes the criterion of his value. The evil complained of is produced by rigour; and, if the case be well considered in all its bearings, the assertion will be found to be true, though it may seem to be a paradox at first sight, that the rule of enforcing a scrupulous exactness in the paper forms to be exhibited by accountants, as a transcript of their actions, is unwise in its aim. It defeats the purpose it is intended to effect; for driving the public servant to the necessity of finding out means of securing himself from loss, as a consequence of accidental or unavoidable omission of formal voucher, it conducts him into a channel, in which he discovers that there exist ways of doing wrong, or of encroaching upon the public property with impunity, even with a legal protection. This is not a rare occurrence; and it proves, among other things, that those who aim at being over-wise frequently over-reach themselves. The authority of forms, certificates and affidavits presents itself to the eye of the public with an imposing appearance, as assuming the ground of commanding honesty by force; but like the other

ingenious complications of man's invention, which desert the path of simplicity and overlook the value of the direct effect, it generates a power which undermines its fabric and renders its action void. The necessity of the production of certificates and affidavits, as vouching the accounts of military hospitals, has no existence in the plan which is now proposed; the evidences are there direct ocular evidences—cause, means and effect, seen, estimated and balanced with each other in a manner level to ordinary understandings. The honesty is not doubted, for it scarcely can be said to be exposed to the chance of incurring a doubt: in the other case, the honesty is suspected strongly; and, it is a well-ascertained fact in the history of human nature, that the fault or failing which is suspected (the most faint traces of it not even existing previously) is not unfrequently produced by the operation of that very suspicion alone: the purity of the mind is wounded; the wit acts in revenge, disposed to consider its successes as a triumph rather than a crime. The path of honesty, and honesty is rigid justice in all its relations, is the only safe path for man in his progress through life, whether in a private or in an official course: it is a forward path, comprehending a point to which the eye is constantly directed; and which belongs to the man himself as an internal principle constituting a guide for his conduct. If statesmen, suspecting the honesty of mankind,

and, above all, the honesty of their subordinate servants, expect to keep their actions in the right course by the force of oaths and affidavits, they will assuredly fail in their expectations. They stand nearly in a similar predicament with the military officer, who suspecting all his soldiers of cowardice, trusts to sergeants, who are placed with halberts in the rear to keep the face of the battalion towards the enemy. It is probable that the coward may be sustained in his place by the pressure of force; it is certain that he will recoil and escape by the nearest avenue, when the force is accidentally withdrawn, weakened or relaxed. It belongs to power and superior genius only to apply it with effect; and thus it is that the machine, which is driven in its course by fear of penalties and fear of death, rather than solicited forward by the internal spring of moral honesty and physical courage, must always be capricious and uncertain in its movements. The artificial fabric now alluded to appears very exact in its arrangement as viewed externally; it falls to pieces in the time of severe trial, particularly if it be not kept in motion by an eye capable of the readiest discernment, and a hand capable of acting with the most prompt decision. The subject is important in its nature; and, if it be well considered in its reasons, the views of statesmen will be directed, in their choice of officers of public trust, by the manifestations of moral pride rather

than the susceptibility of penal fears,—directed to men, who have fixed the eye upon honour rather than upon wealth. If the mechanical system of control, which acts by external impulse of fears and penalties, still continue its rule, there will be no want of grounds for complaint of delinquencies. It is plain, from what is known of the history of mankind, that it is a vain expectation to imagine that the public purse can be securely guarded from depredation by fences of certificates, affidavits and oaths. Such instruments are in fact no more than paper bulwarks: they resist no ingenious and enterprising assailant; they rather afford a covered way, according to the manner in which they are digested, on which the intelligent adventurer advances in safety to seize the citadel. This danger is precluded, as observed above, by the manner in which the control and quittance of hospital accounts, whether general or regimental, is supposed to be arranged and executed. The knowledge of the subject is implied in a direct control of the transactions on the spot: the evidences are present; the demonstration of the effect clear and unequivocal; the purpose is specified; the means estimated, and the end accomplished; the process is open in all its steps, the execution of the effect demonstrable in all its gradations. No part of this investigation lies beyond the reach of a military officer's means and information, and every part of it concerns his

duty; it is therefore to military officers, that the control and quittance of military hospital accounts justly and properly belong in the direct analogy of things. The process is simplified and abridged according to the form of detail exhibited: the action is verified and approved by clear evidence. When verified and approved, the account is quit; and the account being quit, the record of it may be safely extinguished, the public offices disembarassed of waste paper, the salaries of the controllers and auditors left in the treasury*.

The control and quittance of the hospital money account, as the verification of matters which relate to the soldier, belongs to the military officer in command; the plan of the hospital management in its economical as well as medical concerns, digested by those who preside over the national medical establishment and who are supposed to be persons of experience and high professional knowledge, is committed to ordinary physicians and surgeons for execution. An army consists of regiments or different parts, which are separate in their forms, and, in some measure, independent in their regimental economy and interior management; consequently the rule of health is subject to some peculiarity in movement according to differences in the character of the parts. The parts or divisions are various, and, as the ex-

Disposition
of economi-
cal duty
and mode
of inspec-
tion.

* See Note F.

istence of connexion among the parts is not only necessary in fact, but, as the knowledge of the rule, by which the connexion is maintained, is necessary to be publicly known that consequences may be calculated in advance, a class of persons, under the name of inspectors, has been appointed of late years to superintend the execution of medical and economical duties in British military hospitals, as instruments of observing movement and correcting errors which arise accidentally in the action of the separate parts. The inspector, in this view, is a deputed and subordinate officer—a superintendant of order and economy. He is such in the real meaning of the word,—supposed, in virtue of his office, to examine and report a correspondence with rule, or a disagreement from established regulations on a given subject of duty,—not empowered to innovate, or form things anew on his own authority. This is the literal meaning of the word, and, in this meaning, the duty of the office of inspector limits itself to the mere superintendence of execution. It is however to be observed in the present case, that the chief medical officer, employed in the scene of actual war, usually but not correctly named Inspector, has been allowed to transgress the limits of the nominal office. In defect of a reasoned and well-digested general system of medical and economical management for the care of military sick, the chief medical officer selected for military

expeditions or detached military services, usually styled Inspector, ordinarily assumes the power of a chief, arranging the forms of his duty according to his own ideas : and, as two men rarely agree entirely upon subjects where the reasons of things are not demonstrated by the most explicit evidence, the varieties or contradictions, which manifest themselves in the professional arrangements of most of the chief or subordinate inspectors who have been intrusted with the superintendence of medical departments in foreign stations, are eminently conspicuous. The office of inspection is intended to produce, or rather to maintain uniformity in all parts of the service. It supposes a general existing system of management ; but, if such system be not formed correctly in all its parts, the inspector will scarcely know where to begin, or how to pursue his course :—the fruits of his labours will then be of little value. The evils, which result from the operation of contradictory views of economical arrangement among persons intrusted with the direction of the medical concerns of armies, are obvious and important : the means provided in remedy are in no degree adequate. If army physicians and army surgeons were educated according to one correct and approved system, expressly instructed in every thing which relates to military service in the manner suggested in the preceding part of this work, so as to be admitted in no instance to assume their offices without the

exhibition of direct proofs of fitness for the duty, the medical concerns of armies would move in a correct channel, as a consequence of the fruits of uniform and systematic education: the onerous provision of officers for the purposes of inspection, which implies a great expence in the present times, could not then be supposed to have place; for, the physicians and surgeons knowing their duties correctly, and enamoured with the delight which arises from good works producing their true fruit, might reasonably be supposed to act zealously and correctly without the application of foreign stimulation. The circumstances in which the public service stands on this head are momentous, and call evidently for the deliberate attention of those in power. It is undeniably more effective of purpose, and it is presumed, upon good grounds of calculation, that it will be more economical of money to institute a primary school upon a correct and systematic basis for the practical education of army physicians and army surgeons, rather than to assume the ground of drilling the irregular into order by the rod of inspectors, or of forcibly instructing, in the true paths of science and discipline, those who have grown up with rooted bad habits of early education. The truth of this is so obvious as not to stand in need of formal demonstration. It is admitted that uniformity of education is desirable in all military concerns, as implying the organization of various independent

materials for the production of a common purpose; but, while this is so, it is to be observed at the same time, that it is principally in economical management that uniformity of rule can be attained with certainty, or expected to be practised with safety. The diseases which afflict the human body have an infinite variety of shade, resulting from the combined operation of a multitude of causes. As diseases vary in force and form, they actually require a modified variety of treatment. The physician, who does not know to estimate kind and quantity in these varying circumstances, must be considered to be a novice in his profession,—not fit to be intrusted with the execution of a public duty. Ignorance on this head is serious; it opens a chance, even a certainty of introducing a train of actions in practice prejudicial to the public interest: it is therefore to be precluded as far as possible. It may exist under a verbal examination; consequently it may exist, and probably does often exist under the present rule of election; it will be discovered under the trials and exhibitions of skill exacted from physicians and surgeons previous to appointment to the physician's or surgeon's office according to the plan proposed. In such case the physician and surgeon must indispensably possess radical knowledge; for their qualifications are judged by exhibitions of knowledge in action. If those persons be tried in this manner, and known to possess knowledge, the right of discerning dif-

ferences and judging of facts, which fall within the circle of their observation, naturally belongs to their office; the exercise of the act is, in justice, left to their discretion. As army physicians and army surgeons are placed in a near and intimate footing with military sick, their opportunities of knowing the truth of things are good; and, if qualified to be physicians or surgeons in reality, their judgment is entitled to respect: they have an interest in its best and most decisive exertions; they have no interest in a contrary course. It is admitted that the channels of observation may be opened and expanded by those who have greater penetration than ordinary physicians or ordinary surgeons: the judgment may be corrected, and enlightened by the suggestions of those who are more experienced and more discerning; but the charge of life lies upon the conscience of him who acts, and the dictates of conscience are not to be controlled by force. The discrimination of causes and degrees of cause is often nice and difficult, arising only in careful and actual observation: hence, the imperious control of inspectors, in cursory visits, can never be safely deemed authority sufficient to over-rule and direct opinion in the treatment of complicated diseases. If the physician be qualified in knowledge, the exercise of judgment is an affair of his conscience which must be allowed to act freely; if not qualified in knowledge, as he has been appointed through

error, so he must be entirely superseded in his office, without giving farther opportunity of imposing injury on the public service.

It is evident that there is a great delicacy in interfering with a physician in the medical treatment of the sick, for the subject is frequently obscure,—not to be learned without pains, and care, and close attention to circumstances : there is less necessity for reserve in attempting to maintain the arrangement of the subsidiary means in correct method by measures of rigour. The utility of order and economy is demonstrable to common comprehension ; and such being the case, it is necessary that the rules of economy be enforced with the utmost punctuality, as the means of ensuring a consistent effect throughout all the parts of the service. It is plain to every one that any given plan of economy, which is adopted and executed in one regiment, is capable of being adopted and executed in another. As this is true in fact, reason and common sense pronounce unequivocally that the approved rule should be adopted generally and acted upon extensively in practice. Wherever variety exists in the execution of the economical department, the progress of official business is perplexed, and the whole medical operations are placed in a state of constant embarrassment. The source of the variety and irregularity alluded to, which is conspicuous

on many occasions, refers itself to the want of a primary systematic education among the members of the medical staff: the institution of a primary school, for the instruction of army physicians and army surgeons, is consequently the first step in the process of improvement. As it is a vain expectation to imagine that we can form a consistent structure without a just and uniform foundation; so it is scarcely fair to speak harshly of the ignorance of those army physicians or army surgeons, who have not been furnished with opportunities of learning knowledge correctly according to the form prescribed:—the error lies not with them, but with those who appointed them to responsible offices, without exacting precise tests of qualification.

Actual inspection,

As there exists no national seminary of medical education in the kingdom of Great Britain; and, as the professors of the medical art study to attract notice in their sphere, by opening new paths in the field of medical science for the amusement of the curious multitude, the doctrines of teachers assume a great variety of forms; which, diffused widely among the pupils of the various schools, render the opinions and practices of medical men as applied to the business of common life, a singular tissue of varieties, differences and contradictions. This is probably of no great consequence in the civil world, where the aids of the art

are oftener playthings of the patient's fancy, than instruments of the physician's genuine choice ; but in armies, where uniformity and consistency of acting are essential or rather indispensable for the production of a prosperous effect, it becomes the duty of those, who are intrusted with the chief direction of a concern so important as the care of the health of the military force, to put in action the best attainable remedy against the inconveniences arising from a great fundamental defect among the national institutions.

When a plan of economical management for military hospitals, general or regimental, has been arranged by the chief of the department, and sanctioned by the highest military authority in the kingdom, the person named inspector, who is a deputy of the medical chief power, may be supposed to be ordered to proceed on a tour of inspection, instructed to visit all the establishments individually, and to put the approved plan in execution, generally and regimentally, throughout the whole extent of the army. This requires time, and it implies labour ; for, it is necessary that the different corps be visited separately, the hospital concerns arranged systematically, the surgeon instructed correctly, his reason convinced of the truth of principles, and his habits of execution formed to precision by the exhibition of examples of practical experience. The inspection,

which comprises these points of information and instruction, cannot be supposed to be executed in less time than a fortnight, even in the hospital of one regiment. It is necessary for instance, that the inspector examine distinctly how things actually are, and that the surgeon be led in detail through all the parts of his duty with a just conception of the principle and correct execution of the work, viz. an example of the manner of selecting and transporting sick men to hospitals, an example of arranging and classing them according to their diseases, or the conditions of the disease, of purifying their impure bodies at the time of admission, and at succeeding intervals, of apportioning and distributing the diet, of conducting all the matters of subordinate economy after one uniform and correct method as calculated to produce one uniform and consistent effect; and finally, when disease ceases and when strength is regained, of dismissing the subject to his military duty—with evidence and due testimony of his perfect recovery. The inspector, who shews the mode and demonstrates the effect of these forms of discipline, leaves a lesson of useful instruction in the hospital which he visits. Such lesson of instruction serves to impress an opinion on the mind of the surgeon that inspection is not a mere formality; while the process, according to which the inspection is conducted, serves to make the inspector acquainted with the

surgeon's character and professional ability. It thus produces a transfer or mutual intercourse of knowledge, which facilitates the execution of business on future occasions of service: the communications in such case are precise, the capacity of the executive officer is known, so that the consequent effect may be calculated with some degree of certainty. Such mode of inspection could not fail to be useful in the present state of things, where the views of the acting parts are necessarily various or opposite in defect of the operation of a national system of primary education. It implies labour; but labour cannot be objected to with propriety. Inspection is the ostensible duty of the inspector of hospitals; and, as it is a public and important duty, it ought most undeniably to be the sole business of his life. It is only executed, when it is verified on the spot by the examination of all the evidences which belong to the subject; and this, as things now are in Great Britain, implies the necessity of travelling over a wide extent of country. The labours of the inspector are multiplied in proportion as the troops are scattered and dispersed by corps or separate regiments; they are abridged, or so disposed as to be capable of being abridged in proportion as the force is collected in camps or cantonments by brigades or larger bodies. It is observed above, that the due medical inspection of the hospital of one regiment, as implying the necessity of observing and ascertaining the due and

correct movement of the various parts of the medical concern in all its details, could not be accomplished in less time than a fortnight. This may be supposed to be the shortest period in which the revolutions of a regimental hospital could possibly be disentangled, even by an intelligent inspector; but it is plain at the same time, that the revolutions of the hospitals of six regiments might be ascertained during the same period by the same person, provided the troops were placed contiguously, or within a circle of a few miles from each other.

The office of medical inspection, as it now stands in the British army, is of late creation. It appears to have originated in the defects and insufficiencies of College physicians and London surgeons, who, appointed to medical trust in military service from the walks of civil life, were unexperienced and unacquainted with military things, and as such were reasonably supposed to be at a loss how to act in the perplexing scenes of war. This is at least held in common opinion to be the cause of the appointment of the numerous class of inferior inspectors. It will not be altogether denied that there existed a necessity for a remedy as the case stood at the time; but, if the necessity existed, it will readily be admitted that there was radical error in constituting an instrument for the service of the public which stood so

much in need of a remedy, as that implied in the measure adopted. The appointment of inspectors was a temporary expedient for an existing evil; bearing analogy to the practice of a master, who, hiring labourers as journeymen for the exercise of a particular art, finds on trial that they are only apprentices; and who, instead of dismissing them from his service when he discovers their imperfections, hires others to instruct them in the knowledge of duties that belong to the office which they had undertaken to execute. The operation is at best complicated;—and the business does not admit of complication. It is expensive, inasmuch as it constitutes two persons for the performance of a duty which actually belongs to one; and, while expensive of means, it is found on trial, not to be effective of purpose. The physician's duty in a military hospital differs so materially from the professional duties of physicians in civil life, that the president of the College of Physicians might be deemed a tyro in this new scene, and might probably be found to act unskilfully and ineffectively in spite of the best care of the deputed inspector. The remedy thus fails of its end on one hand; it even produces evil on the other; for those few physicians, who are masters of their art in all its extent, probably superior in years, experience and knowledge to the inspector, can scarcely fail to be chagrined by the interference of a person confessedly inferior in acquirements to

themselves; and, if chagrined from such a cause, it is hardly to be doubted but that their zeal and animation will be damped and chilled. There is evidently an error in the principle of medical arrangement which renders such form of inspection as that here alluded to necessary; there is even error perhaps in the rule of application to practice as it now exists. As the office under view was introduced into the army in a real or supposed want of experience of military service among regular physicians and regular surgeons, that is, College physicians and London-bred surgeons, so it will become useless, and being useless it will cease, when the executive medical officers of the army are educated systematically, nominated to offices according to demonstrative testimonies of merit; and, in no case appointed to public trust without the most decisive evidences of due qualification. It is plain, as the case now stands, that a great number of inferior inspectors is not only a superfluity, but an evil. The inspector will not be useful in his office, unless he be a person of more than ordinary professional knowledge,—intimately acquainted with the principles of things, and acute in discerning the minutest deviations from order and economy which can possibly arise. If he be not a high authority, he will not command respect; and the authority of office, according to what we see in common life, sinks in proportion as it is multiplied, or ren-

dered common. If the inspector of hospitals do not present himself to the regimental surgeon or staff physician as a person of very superior knowledge and experience; and, if he do not, at the same time, possess a high authority by official commission, he will effect very little good in his nominal office of inspection. His presence intimates tacitly that there is a suspicion of insufficiency on one part; it is not clear, though it ought to be incontrovertible in all cases, that there is a capacity of making just correction, or of conveying useful information on the other. The office of inspection compares, estimates and reports, for the general purpose of preserving a correspondence among the various parts of the medical department; and, as different persons are disposed naturally to view things differently, it is obvious that the execution of the office should be concentrated and condensed, committed to one person, or to as few persons as are capable of overtaking the extent of the labour. The original purpose of preserving union among the scattered parts is defeated by the multiplication of officers and division of duty; hence, the existing practice is nugatory of its purpose, independently of the useless and wasteful expence of money consumed in unproductive salaries. Such being the case, and it is self-evident, it may not perhaps be deemed unworthy the attention of public ministers to consider the subject with attention. Whether

viewed with an eye to medical effect or to economy of means, the just arrangement of the medical department of the military force is entitled to command a share of their best deliberations.

Table, N° XIV.

Forms of Requisition—regular and extra.

A. Required for the Use of Hospital, N° I. for the Consumption of the 1st of May 1805.

Requisition for Meat.

	oz.	lbs. oz.
Hospital Patients, Extra and regular Diet-table.		
60, Low diet, at 4	15	0
60, Half diet, at 6	12	8
40, Full diet, at 8	20	0
160 Total	57	8
As per extra diet-table	1	0
Total regular and extra	58	8
Servants.		
16, at $\frac{3}{4}$ lb. each	12	0
Total	70	8

(Signed) A. B. Steward.
(Verified) C. D. Physician.

B. Required for the Use of Hospital, N° I. for the Consumption of the 1st of May 1805.

Requisition for Bread.

	oz.	lbs. oz.
Hospital Patients, Extra and regular Diet-table.		
60, Low diet, at 4	15	0
60, Half diet, at 8	30	0
40, Full diet, at 8	20	0
160 Total	65	0
As per extra diet-table	2	0
Total regular and extra	67	0
Servants.		
16, at 1 lb. each	16	0
Total	83	0

(Signed) A. B. Steward.
(Verified) C. D. Physician.

Note.—The requisitions for meat and bread mark the proportions of hospital patients, as reported in the different scales of diet. The proportions of milk, potatoes, oatmeal, barley, rice, tea, sugar, &c. follow the rule established for the diet of different classes of sick or convalescent; the card or extra table expresses the excess, rendered necessary by particular circumstances of subject, and supported by specification of purpose, as authority for requisition. Such forms of requisition constitute the radical instrument of hospital economy; digested, as they are in this example, they must be supposed to preclude the possibility of error and abuse on the part of inferior officers; the purpose is directly specified, the cause and means correctly balanced, the application sanctioned by the chief medical officer, who is the only competent authority in hospitals.

C. Form of a Table or Card, comprising an Abstract of the Requisitions of extra Articles of Diet and Refreshment for the Use of the Sick of Hospital, N° I. for the 1st May 1805.

Daily Number of Patients.	Meat, lb.	Bread, lb.	Potatoes, lbs.	Pudding, portions.	Sago, portions.	Arrow Root, portions.	Custard, portions.	Jellies, portions.	Flummary.	Milk, pints.	Eggs, number.	Oranges, number.	Lemons, number.	Apples, number.	Lump Sugar, oz.	Wine, gills.	Brandy, gills.	Gin, gills.	Rum, gills.	Porter, pints.	Cyder, bottles.	Dorchester Ale, bottles.	Salt, oz.	Pepper.	Mace.	Mustard.	Vinegar, gill.
Sunday 160	1	2	3	4	3	5	2	1	6	2	6	6	3	10	4	6	3	2	3	6	2	2	2	2	4		1
Monday																											
Tuesday																											
Wednesday																											
Thursday																											
Friday																											
Saturday																											
Total																											

(Signed) C. D. Physician.

Note.—In the above card or table is exhibited an abstract of the extra requisitions, as marked in the extra tables of the different wards, signed by the acting physician or surgeon, and as such deemed authentic vouchers of expenditure.

D. Estimate of the Quantity of Soap required for washing Hospital Clothing, and for other Hospital Purposes.

Number of Articles.	Quantity of Soap.
	lbs. oz.
100 Pairs of sheets	5 0
100 Shirts	4 0
100 Pieces of hospital dress, gowns, pantaloons or jackets	5 0
100 Blankets or rugs	10 0
100 Bed sacks or pallasses	3 0
Each ward per week	2 0
Bath ditto	1 0
Barber ditto	1 0
Extra use	1 0
Total	3 1 0

Note.—The form according to which the calculation should be made, is exhibited in the present case, as informing surgeons of regiments how to calculate, according to a systematic rule, the minutest articles of expence which belong to the entertainment and support of sick men in hospitals.

to be submitted to the Committee of the Board of Directors of the Hospital, and to be approved by them, before the same can be put into effect.

A. Form of Diet-table.

No.	Name	Diet											
		Breakfast	Second Breakfast	Tea	Dinner	Supper	Port	Wine	Spirit	Other	Total	Remarks	
1	Mr. A. B.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
2	Mr. C. D.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
3	Mr. E. F.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
4	Mr. G. H.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
5	Mr. I. J.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
6	Mr. K. L.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
7	Mr. M. N.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
8	Mr. O. P.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
9	Mr. Q. R.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
10	Mr. S. T.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
11	Mr. U. V.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
12	Mr. W. X.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
13	Mr. Y. Z.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
14	Mr. A. B.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
15	Mr. C. D.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
16	Mr. E. F.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
17	Mr. G. H.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
18	Mr. I. J.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
19	Mr. K. L.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
20	Mr. M. N.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
21	Mr. O. P.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
22	Mr. Q. R.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
23	Mr. S. T.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
24	Mr. U. V.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
25	Mr. W. X.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
26	Mr. Y. Z.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
27	Mr. A. B.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
28	Mr. C. D.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
29	Mr. E. F.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							
30	Mr. G. H.	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread	1/2 lb. Bread							

C. D. Physician
The extra requisitions, as marked in the plan of the table, and as soon received and

to be submitted to the Committee of the Board of Directors of the Hospital, and to be approved by them, before the same can be put into effect.

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Table, N° XV.

Forms of Diet-tables.

A. Form of Diet-table recommended by the Author.

	Full.	Middle or Half.	Low.
Breakfast.	1 Pint rice milk, or milk porridge made with oatmeal:—if oatmeal and rice be disagreeable to any one of the patients, tea or cocoa, vegetable soup or milk and bread boiled, are to be substituted in their place.	The same as for the class of persons in the list of full diet.	1 Pint of tea.
Dinner.	1 Pint barley broth or beef soup. 1 lb. Meat, beef or mutton. 1 lb. Bread. 1 lb. Potatoes. 1 Pint small beer.	1 Pint barley broth or beef soup. 6 oz. Beef or mutton. 1 lb. Bread. 1 lb. Potatoes. 1 Pint small beer.	1 Pint bouillon or beef tea, or chicken water. 4 oz. Bread,—toasted.
Supper.	The same as breakfast.	The same as breakfast.	1 Pint tea; or rice, barley or oatmeal gruel.

Note.—The proportions of the compound parts of diet are as follow: One half pint of new milk—without admixture of water, two ounces of rice, or four ounces of oatmeal, half an ounce of sugar, or thirty grains of salt:—for the bread soup two drachms of butter, six ounces of bread:—for the barley broth, two ounces of barley, one ounce of turnip, two ounces of greens, half an ounce of leek or onion, with discretionary seasoning of herbs, pepper and salt:—for the portion of tea, sixth part of an ounce of sugar, sixth part of a pint of new milk.

B. Regimental Diet-table of the last Hospital Regulations.

	Full.	Half.	Low.	Spoon or Fever-diet.
Breakfast.	1 Pint of milk porridge, or rice gruel.	1 Pint of milk porridge, or rice gruel.	1 Pint of milk porridge, or rice gruel.	Tea.
Dinner.	1 lb. Meat. 1 lb. Bread. 1 lb. Potatoes.	1 lb. Meat. 1 lb. Potatoes. 1 lb. Bread.	1 Pound of meat, made into weak broth. 1 lb. Bread. 1 lb. Potatoes.	1 lb. Of bread made into a panada or pudding, with as much milk or sago.
Supper.	1 Pint of broth, made from the meat.	The same as in the table of full diet.	1 Pint of milk porridge, or rice gruel.	Tea.

C. Forms of Diet-tables for British military general Hospitals.

	Full.	Half.	Low.	Milk.	Remarks.
Breakfast.	1 Pint of oatmeal, or rice gruel.	1 Pint of oatmeal, or rice gruel.	1 Pint of oatmeal or rice gruel, with wine and sugar, at the discretion of the surgeon.	1 Pint of milk.	Mutton, fish, chicken broth, wine, porter, cyder, brandy, tea, potatoes, vegetables, to be allowed to such particular patients whose cases the attending surgeon may think will require such indulgences.
Dinner.	1 lb. Bread. 1 lb. Meat. 1 Quart of small beer.	1 lb. Bread. 1 lb. Meat. 1 Quart of small beer.	1 Pint of broth. 1 lb. Bread. Barley or rice water for common drink.	1 Pint of broth. 1 lb. Bread.	
Supper.	1 Pint of broth.	1 Pint of broth.	1 Pint of oatmeal, or rice gruel.	1 Pint of milk.	

D. Form of the Diet-tables of the Prussian military Hospitals.

	Full.	Half.	Quarter.
Breakfast.	1 Pint of gruel of meal, grutz, white bread, or bread soup.	The same in kind.	The same in kind.
Dinner.	1 Pint and half of meat broth, made alternately with barley, grutz, or rice. 1 lb. Meat. 1 lb. Bread per day.	1 Pint of meat broth, made in the same manner, with barley, rice, or grutz. 1 lb. Meat. 1 lb. Bread.	1 lb. Rice or barley gruel made without meat. 1 lb. Bread.
Supper.	The same as breakfast.	The same as breakfast.	The same as breakfast.

Note.—The above is the common diet-table of the Prussian military hospitals. Particular cases of disease obtain occasional attentions, admitting sometimes of additions or change; but upon the whole the scale is very mechanical, depending rather upon the director of economy than the physician or surgeon.

E. Form of the Diet-tables of the Austrian military Hospitals.

	Full.	Half.	Third.	Quarter.	Extra Diet.
Breakfast.	1 Pint of meat broth with roots, &c.	The same in kind.	The same in kind.	The same in kind.	The extra diet consists of a rich, pure and good meat soup, to be given frequently during the day, and even during the night, every hour or every two hours. To this is occasionally to be added the yolk of an egg, barley gruel or gruel of the finer grains, so as to form a drinkable panada.
Dinner.	1 Pint of barley, rice, or vegetable soup. 1 lb. Boiled beef, without bone, with a suitable sauce, and vegetables according to the season of the year.	The same in kind. 4 oz. of beef, without bone, with a suitable sauce, and vegetables according to the season. 13 oz. Bread.	The same in kind. 3 oz. of veal or lamb, or quarter of a chicken, with a suitable sauce, and proportion of vegetables or roots. 6 oz. Bread.	The same in kind, viz. Barley, rice, vegetable soup, panada.	
Supper.	1 Pint panada or gruel.	Panada.	Panada.	Panada.	

Note.—The arrangement of the diet of the Austrian military hospitals appears to have been considered with attention and regard to the conditions of the sick. It is changed according to an order of alternation, so as to present variety, the cookery being so studied as to present what is most agreeable to the taste of the patient. If an opinion be formed of the character of the Emperor Joseph from the evidences of his hospital regulations, he appears decidedly to be the most amiable and benevolent, the most enlightened and scientific monarch of his age. The Prussian hospital regulations mark the operations of a mechanic on the parade, forming things mechanically for a coup d'œil, without a due consideration of the innate qualities or accidental conditions of the materials. The King of Prussia is only a drill sergeant in his hospital; the Emperor Joseph is a philosopher and a physician.

APPENDIX TO TABLE, N° XV.

Receipts for the Preparation of Hospital Diet.

Barley Broth.

FOUR pounds of beef, juicy, but not fat, ten ounces of fine barley, six quarts of soft water; the beef and barley put into the water while cold, the scum taken off carefully as it first rises; the beef and barley having boiled slowly for some time, three middle-sized carrots, three middle-sized turnips, three leeks, or, in defect of leeks, three onions are to be added. When the whole has simmered or boiled very slowly for five hours, it will be reduced to about five quarts, and will prove to be very excellent broth.

Beef Soup with Vegetables.

Four pounds of beef, six quarts of water, the beef put into the water while cold, the scum taken off carefully as it rises, and, when pure, add three turnips cut small, two carrots grated, one cut in pieces, two sticks of celery, two onions, a pint of green peas, when in season, and a little thyme. Let the whole simmer or boil very slowly for five hours, when it will be reduced to five quarts. There may be additions of cabbage or other greens, or these may be substituted for carrots and turnips.

Peas Soup-maigre.

To a quart of split peas put three quarts of water, and boil gently till the peas are dissolved; then put them

through a sieve, and return them into the water, with the addition of carrots, turnips, celery, leeks, thyme, sweet marjoram, onions, three anchovies or a red herring, and a few pepper-corns. When sufficiently stewed, strain—add catchup and salt.

Beef Tea.

A pound of the lean part of beef, free from fat and skin, two quarts of boiling water being poured upon it, put it on the fire, that the scum may rise, skim it carefully as it boils, and when clear, the beef appearing to be deprived of all its juice, strain it off.

Bread Soup.

Set a quart of water on the fire in a clean saucepan, and as much dry crust of bread cut to pieces as the top of a penny loaf, the drier the better, with a bit of butter as big as a walnut. Let it boil, then beat it with a spoon, and keep boiling it till the bread and water be well mixed. Season it with a little salt.

Chicken Water.

A large fowl or cock skinned, the bones bruised with a hammer, put into a gallon of water with a crust of bread, boiled for some hours, and strained.

Stew of Mutton with Potatoes.

Four pounds of the neck or ribs of mutton cut in pieces, twelve pounds of potatoes skinned, cleaned, the large ones cut in two or more pieces, four quarts of water, six onions, pepper and salt as much as is sufficient for seasoning; stew the whole together in a pot, closely covered, over a slow fire, for four hours.

Stew of Beef with Roots and Vegetables.

Four pounds of beef, six carrots, six turnips, two large onions, one large cabbage, one bundle of thyme, two quarts of water. Let them be covered close and stewed for five hours, seasoned with salt and pepper.

Rice Milk.

Boil two ounces of rice in water till it be swollen and soft—then add half a pint of new milk. Let it boil a few minutes, adding sugar or salt as suits the taste.

Oatmeal Porridge.

One pint of water with twenty grains of salt: when the water boils strew in gradually a quarter of a pound of oatmeal, stirring constantly; let it boil half a minute; remove it from the fire.—To be eaten with milk or beer.

Panada.

A blade of mace, a large piece of the crumb of bread and a quart of water put into a saucepan, boiled for two minutes, the bread taken out and bruised very fine in a bason, then mixed with as much water as may be required, and sweetened to the taste—put into it a piece of butter as big as a walnut; grate in a little nutmeg.

Water-gruel.

Put any given quantity of oatmeal into a wooden bowl, rubbing it against the sides of the bowl, and pouring on water gradually till the mucilaginous part of the oatmeal be extracted: boil it over a fire, skimming it till it appear clear: put salt to it and a little bit of fresh butter—a large table-spoonful of oatmeal may be reckoned sufficient for a quart of gruel.

Salop.

A large tea-spoonful of the powder of salop, put into a pint of boiling water—stirred constantly till it be a fine jelly: put in wine and sugar to the taste.

Arrow Root.

A tea-spoonful of arrow root in a pint of milk stirred constantly over the fire, till it become of a proper consistence.

Custard.

A pint of new milk, three eggs beaten well together, two ounces of sugar, a little cinnamon: stir it constantly over a slow fire till it thicken: do not allow it to boil. When cold put into it two table-spoonfuls of white wine.

Calves-feet Jelly.

Two calves feet boiled in a gallon of water till the quantity be reduced to a quart: when cold skim off all the fat and take the clear jelly; put it into a saucepan with a gill of white wine, six ounces of sugar, the juice of two lemons and the rind of one; beat up the white of two eggs with some cinnamon, put them into a saucepan, stir all well together till it boils, and let it boil a few minutes. Strain it through a large flannel bag, and repeat the strainings till it be clear.

Table, N° XVI.

Weekly Abstract of Expenditure for Hospital, N° 1. viz. from the 1st of May 1805 to the 7th inclusive, comprehending the ordinary Diet and Refreshment of the Patients; the Rations of Provisions of the Nurses and Attendants, with the Expenditure of Soap for washing and other Purposes,—extracted from the daily Diet-tables and extra Orders of authenticated Authority.

Servants	Patients.			Rations of Diet.			Persons dieted.	Bread, lbs.	Meat, lbs.	Potatoes, lbs.	Oatmeal, lbs.	Barley, lbs.	Rice, lbs.	Muscovado Sugar, lbs.	White Sugar, lbs.	Tea, lbs.	Coffee, lbs.	Sago, lbs.	Arrow Root, lbs.	Milk, pints.	Salt, lbs.	Pepper, lbs. oz.	Wine, gallons and pints.	Brandy, gallons and pints.	Rum, gallons and pints.	Gin, gallons and pints.	Cyder, bottles.	Dorchester Ale, bottles.	Porter, gallons and pints.	Small Beer, gallons and pints.	Eggs, number.	Apples, number.	Oranges, number.	Lemons, number.	Custard, portion.	Jelly, portion.	Butter, lbs.	Pot Herbs, lbs.	Mustard, lbs.	Vinegar, quant.	Soap, lbs.					
	Full.	Half.	Low.																																											
112	280	420	420	1120	140	140	210	70	35											280											35															
					210	157½	210			52½	20										420											52														
					105	105					50		8								140																									
					Extra.	6	4		6	4	4		1									10			Gall. 1	Gall. ½			1		Gall. 2		20	100	10	6	6	6								
				Total	461	406½	420	76	39	56½	70	1	8							850	15	1	1	½			1		2	87	20	100	10	6	6	6	2	175								
112					112	84	112																								28															
				Total	1232	573	490½	952	76	39	56½	70	1	8						850	15	1	1	½			1		2	115	20	100	10	6	6	6	2	175½		1	39					

Note.—The above abstract exhibits the amount of the expenditure of the hospital during the week, including every thing which relates to the diet, refreshment, &c. of sick, and the provisions of servants; no allowance is made here for a banian day for the class of convalescents, the saving arising from which might probably not be less than ten or fifteen shillings.

Examined and certified to be a correct abstract of the weekly expenditure.

C. D. President.

May 8, 1805.

51
 1870
 1871

Date	Particulars	Amount		Balance
		To	By	
Jan 1	Balance forward			100.00
Jan 10	Received of A. B.	50.00		150.00
Jan 20	Received of C. D.	25.00		175.00
Jan 30	Received of E. F.	25.00		200.00
Feb 10	Received of G. H.	50.00		250.00
Feb 20	Received of I. J.	25.00		275.00
Feb 30	Received of K. L.	25.00		300.00
Mar 10	Received of M. N.	50.00		350.00
Mar 20	Received of O. P.	25.00		375.00
Mar 30	Received of Q. R.	25.00		400.00
Apr 10	Received of S. T.	50.00		450.00
Apr 20	Received of U. V.	25.00		475.00
Apr 30	Received of W. X.	25.00		500.00
May 10	Received of Y. Z.	50.00		550.00
May 20	Received of A. B.	25.00		575.00
May 30	Received of C. D.	25.00		600.00
Jun 10	Received of E. F.	50.00		650.00
Jun 20	Received of G. H.	25.00		675.00
Jun 30	Received of I. J.	25.00		700.00
Jul 10	Received of K. L.	50.00		750.00
Jul 20	Received of M. N.	25.00		775.00
Jul 30	Received of O. P.	25.00		800.00
Aug 10	Received of Q. R.	50.00		850.00
Aug 20	Received of S. T.	25.00		875.00
Aug 30	Received of U. V.	25.00		900.00
Sep 10	Received of W. X.	50.00		950.00
Sep 20	Received of Y. Z.	25.00		975.00
Sep 30	Received of A. B.	25.00		1000.00
Oct 10	Received of C. D.	50.00		1050.00
Oct 20	Received of E. F.	25.00		1075.00
Oct 30	Received of G. H.	25.00		1100.00
Nov 10	Received of I. J.	50.00		1150.00
Nov 20	Received of K. L.	25.00		1175.00
Nov 30	Received of M. N.	25.00		1200.00
Dec 10	Received of O. P.	50.00		1250.00
Dec 20	Received of Q. R.	25.00		1275.00
Dec 30	Received of S. T.	25.00		1300.00
Total		1300.00		1300.00

By Commanding Officer

1870
 1871

Table, N° XVII.

Weekly Cash Account of Hospital, N° I. from the 1st of May to the 7th inclusive.

		<i>Debtor by Expenditure.</i>					<i>Per contra Creditor.</i>		
		<i>£.</i>	<i>s.</i>	<i>d.</i>			<i>£.</i>	<i>s.</i>	<i>d.</i>
1120 Hospital Patients. 112 Patients for Servants. Total 1232 N. B. Voucher—the Abstract of Expenditure, Table N° XVI.	To 573 lbs. bread, at 1½d. per pound.....	3	11	7	By cash received on account of stoppages, viz. for 1120 patients at 10d.	46	13	4	
	To 490½ lbs. meat, at 6d. ditto	12	5	3					
	To 952 lbs. potatoes, at ½d. ditto	0	19	10					
	To 175 lbs. pot-herbs (greens, onions, leeks and aromatic herbs), at ½d. per pound.....	0	3	7					
	To 76 lbs. oatmeal, at 2d. per pound.....	0	12	8					
	To 39 lbs. barley, at 2d. ditto	0	6	6					
	To 56½ lbs. rice, at 2d. ditto	0	18	10					
	To 70 lbs. Muscovado sugar, at 10d. per pound.....	2	19	4					
	To 1 lb. lump sugar, at 1s. 3d. per pound.....	0	1	3					
	To 8 lb. Souchong tea, at 5s. 6d. ditto	2	4	0					
	To 850 pints new milk, at 2d. per pint.....	7	1	8					
	To 15 lbs. salt, at 3d. per pound.....	0	3	9					
	To 1 lb. black pepper 3s. mustard 1s. 6d. vinegar (1 quart) at 1s.	0	5	0					
	To 1 gallon port wine, at 10s. per gallon.....	0	10	0					
	To ½ gallon brandy, at 1s. per bottle.....	0	1	0					
	To 2 gallons porter, at 4s. per gallon.....	0	8	0					
	To 115 gallons of small beer, at 8d. per gallon.....	3	16	8					
	To 20 eggs, at 1d. each.....	0	1	8					
	To 100 apples, at 2s. 6d. per hundred.....	0	2	6					
	To 10 oranges, at 4s. per score.....	0	2	0					
	To 6 lemons, at 2s. per dozen.....	0	1	0					
	To 6 custard portions, at 4d. each.....	0	2	0					
	To 6 jelly portions, at 4d. each.....	0	2	0					
	To 2 lbs. fresh butter, at 1s. 3d. per pound.....	0	2	6					
	To 39 lbs. of soap, at 10d. per pound.....	1	12	6					
	To servants' wages (as per pay-bill acquitted).....	4	8	0					
	Total.....	43	13	7					
					By balance	3	1	9	

N. B. The orderlies and servants of the economical administration are supposed to be soldiers.

May 8, 1805.

Examined, certified, approved and acquitted.

E. F. Commanding Officer.

NOTES

ILLUSTRATION, PROOF, AND APPLICATION.

CHAPTER IV.

A. §. **THE** class of economical officers named Purveyors Purveyor. and the tribe of ladies named Matrons, as constituted in military hospitals in Great Britain, appear, from what has been said in the preceding pages, to be superfluous in their nature, that is, not necessary for the execution of the duties which they are appointed to perform. If this be so in fact, it follows as a just consequence that the formal appointments should be discontinued; for, if not useful, they are obviously expensive. The officer, named purveyor of hospitals, is not supposed to be competent to judge of the wants of sick men from his own knowledge of their condition; he cannot therefore be supposed to be intrusted with the power of applying means in relief of wants by his own authority. If he possess the power without the knowledge, as he is not, in such case, capable of judging of what is fit, it is evident that he is liable to incur the danger of committing error in the arrangements which relate to order and economy. The adjustments of economy and the preservation of order, within the circle of hospitals, are parts of duty connected with effect upon

the issue of disease not less essentially perhaps than medical prescription, consequently they belong exclusively to the department of the medical officer. If this be so, the office of purveyor must appear to be superfluous in military hospitals,—its action probably embarrassing as interfering with the arrangement of internal duties: if superfluous, even embarrassing as connected with the execution of internal duties, it will scarcely be maintained, by those who are acquainted with military service, that it is necessary for the management of the external concerns. It is understood that contractors or tradesmen are obliged, under a penalty, to bring the great articles of hospital consumption to hospitals in a given quantity, at a given hour; that stewards are capable, and that they are empowered to purchase at a common market, by express order of the chief medical officer, such matters of occasional want, not implied in the greater contract, as the accidental circumstances of the sick demand. This constitutes a plain case which applies to the purveyance of hospitals in times of peace, in stationary quarters: in times of war, on actual service, the great articles of hospital consumption are furnished at the commissariat depot according to authenticated requisition, the steward, in a similar manner as in the other case, is empowered to purchase, at a common market, such matters of occasional want as the stores of the commissary do not supply. As this may be done, and actually has been done, proved in trial to be capable of a correct and effective execution, it can scarcely be supposed to be necessary to appoint a purveyor with a high salary and officer's commission for a purpose which is so simple, so easily and so satisfactorily accomplished by a steward. The expence is superfluous, and there is this further error in the rule, that it places

the man above his business. This is demonstrative, if the manner in which the duty is capable of being conducted be considered with attention. The steward is supposed to present a requisition for a specified quantity of any one of the articles, or of all the articles of hospital consumption, authenticated by the signature of the medical officer in chief: the requisition, so authenticated, is authority for delivery; receipt, or acknowledgment of execution by the hand of the steward, is sustained as a valid voucher for the contractor or commissary at the settlement of accounts. The business is simple and plain, little liable to fallacy or fraud. The case is not a supposed one:—the purveying concerns of the most important military hospital in Great Britain were conducted by the author in the manner stated with a correctness of effect certainly not exceeded, if ever equalled, at any of the hospital establishments within the empire.

As the office of purveyor, according to the present Matron. meaning and import of the word, is a superfluous, if not an embarrassing office in hospitals; so the appointment of a matron, with a gentlewoman's salary and corresponding allowances, is not found in trial to be conducive to the preservation of good order and economy, or necessary for keeping the account of the expenditure of linen. The hospital of the army depot in the Isle of Wight had not, during the time that the author of this work was intrusted with the management of it, either purveyor or matron; yet its order and economy, both exteriorly and interiorly, in the midst of pressure of sickness with defective means of accommodation, might challenge comparison, as has been just now said, with the order and economy of any hospital in the kingdom. It appeared to the author, in assuming

this rule of acting at the army depot hospital, that the foundation of good order and economy consists in having nothing that is superfluous, and nothing that is higher in opinion, or raised higher by official commission than the literal performance of the duty requires. If the purveyor be actually reduced to the condition of a steward, the commission of purveyor is not simply superfluous, it is injurious, as it places him, in opinion, above the duty of his station. In the same manner, if the office of matron be the superintendence of nurses, the execution of the duty implies an intimate acquaintance with the conditions of sick men, and a motherly care of the concerns of sick soldiers. If this be so, it is reasonable to suppose that the requisite qualifications will be most surely found in those who have officiated as sick nurses, and who possess some equality of condition with the objects of their care. If the matron of a military hospital hath no knowledge of the soldier's character, she cannot execute her duty skilfully; or, if she be placed above his condition in the rank which she has held in society, there are more chances that she abhor the loathsomeness and drudgery of her task, than that she administer, with charity and sympathetic feeling, to the distresses of those whom she has been accustomed to consider as belonging to an inferior class of the community. It is admitted, that it is possible, that a philanthropic sentiment may be generated by a combination of fortunate causes which arise in the course of her labours so as to cover the formal acts of her duty with the garb of pure and animated benevolence; but the production of such effect is precarious and uncertain; and, if it be not produced, the office degenerates into a sinecure, with a large share of the evils which attach to sinecures. It is demonstrative that the

appointment of matron can have no place in military hospitals, if the medical officer, who has charge of the sick, do his duty. It is thus superfluous in reality, and, as it exists in fact, it must be supposed to owe its introduction to a mistaken principle,—an incorrect view of the real state of things. It is probable that the custom which obtains in the hospitals, which are instituted for the purposes of civil life, furnished the example of introducing a similar custom into the hospitals of the military in Great Britain. It is plain that physicians and surgeons, who visit hospitals on certain days of the week only, must of necessity leave the intermediate medical or surgical treatment to the house surgeon, as they must be understood to leave the arrangements and execution of order and economy entirely to the matron at all times. If this example be the source of the rule which now obtains in military hospitals in Great Britain, it may be said with safety that it has been adopted without being understood. The care of the sick soldier, who is received into the military hospital, interests the military physician or military surgeon in all his concerns. He is visited—not daily, but several times in the day when his occasions require such attention. The army physician domesticates with his charge, makes himself acquainted personally with the execution of his orders, and the consequent effect of his applications. There exists in this case no medium between him and the ordinary nurse: he holds the defects of execution chargeable to his own account, and does not deem himself divested of responsibility in any matter which concerns the sick, or the good order of the hospital, either exteriorly or interiorly, by delegating power to inferior persons. Where such form of discipline exists, the medical officer, cordially interested in

the fate of his charge, and frequently present at the bedside of his patient, may be considered as possessing the opportunity of witnessing the execution of his own orders both medically and economically; consequently the necessity, even the propriety of the appointment of an intermediate person, commonly named hospital matron, is superseded. The reason for abridging superfluity in this case is clear; the advantage, resulting from it, demonstrative; but, if notwithstanding the clear reason and demonstrative advantage alluded to, the existing custom should still be persisted in, it must at least be admitted that great care and circumspection should be employed in selecting such persons to fill the office, as, from the known tenour of their character, give a fair expectation of executing it usefully. A matron, as the name imports, is an elderly person, reasonably supposed to be a person of experience in ordinary business; a person, who, while she has attained the years of matured discretion, is also of exemplary good conduct in the practices of her civil life. Whether such character can be applied generally to the matrons of the military hospitals in Great Britain, a reference to the list of this class of persons will best explain. Where there is variety in number there naturally may be expected to appear shades of difference in kind; but, if it should appear that a young woman, who has not yet attained her twentieth year, stands in the list of hospital matrons, there will be just reason to say that the customary order of things is inverted; or, if women of a riper age, but of too high a class to be acquainted with the sick soldier's condition, without which the duty cannot be supposed to be correctly executed, be placed in this laborious charge, the office may be said to be exposed to the almost certain chance of degenerating into a sinecure. The appoint-

ment of persons of a high class who are disposed to view the sick soldier as far below their own level, or, of persons, young in years and unacquainted with common things, to fill an office, the qualifications for which are supposed to be the acquisition of years and experience only, seems to be a mockery of public service. There may be reasons for such appointments; but they are not public ones.

B. The diet-tables annexed to this work shew the different scales of diet, the different quantities of the scales as allotted to the same classes of sick in different establishments, as the result of different national customs, or different medical opinions among members of the same nation. The table, arranged by the author of this work and adopted in practice, exhibits a lower allowance of animal food than the diet-tables of the ordinary military hospitals; the refreshments are more varied, and there is reason to believe more suitable to the sick men's taste. In the diet-tables of the different military hospitals, established by the principal warlike powers on the continent, there is less variety of material than is found in the diet-tables of the British hospital establishments. But though there may be latitude in quantity and kind, according to opinion or prejudice among different nations, there is no instance in any, except in the British military general hospitals, where the allowance of animal food for dinner alone is greater than the common health ration for the consumption of the day. The allowance of meat for the convalescent, in the British military general hospital, stands at one pound for dinner alone—breakfast and supper are extra—and of other materials: the barrack allowance of meat, considered as the mess and basis

of the soldier's diet, is limited—not to exceed three quarters of a pound. If such be the case, there appears to be an incongruity in the rule which applies to hospitals. It may perhaps be offered in explanation, that the scale of hospital diet was fixed by persons who had no knowledge of the existing regulation which limits the barrack allowance of meat to three quarters of a pound per day; for, with such knowledge before the eye, it could scarcely be supposed that they would have hazarded the establishing of a rule which is so inconsistent with common opinion. If the barrack allowance be sufficient; and, it must be admitted to have been fixed by those who had knowledge of the life and manners of soldiers, the hospital allowance must be deemed to exceed the just measure: as such it is wasteful of the treasures of the state, if not injurious, by its effects, to the health of the subject.

Hospital
purvey-
ance.

C. The arrangement of hospitals, at least the arrangement which relates to internal diseases, is supposed to be under the direction of professed physicians. The consideration and cure of internal diseases, which fall within the physician's province, are the more important, and, for the most part, the more numerous class of maladies which occur in military hospitals: hence, the physician's task is prominent, his power sovereign, and his labours supposed to be assiduously exerted in the execution of his duties; among others in providing and adjusting all the concerns of the sick. This natural inference and customary rule is superseded in the present time. The surgeon-general, on what grounds the author does not stop to inquire, appears to have relieved the physician-general from the trouble, or rather the duty of his office on this head. The surgeon-general allots the duties, medical as

well as surgical, superintends the management of such hospitals as are placed within the limits of the kingdom; and, he moreover seems to have assumed the part of acting as grand purveyor, or agent for contract in all hospital concerns. He is thus the ostensible person in the eye of all those who are intrusted with the subordinate management of general hospitals, either at home or abroad. Requisitions are submitted to him, supplies are ordered by him, and the London market appears, in his opinion, to be the preferable market for all manner of things which are wanted for the purposes of the sick, either in England or in foreign parts. Hence it is, that transportable articles of hospital consumption are sent from London to the most remote parts of the kingdom in which general hospitals are established; notwithstanding that these very articles may be had as cheap, even cheaper on the spot where the hospital is placed than they actually are in the markets of the metropolis. But this, though noting a considerable predilection for the London market, does not mark the whole extent of its influence. If the list of hospital supplies be examined as they actually stand, it will appear in evidence that wine, spirits and other things of a like nature are not only sent from London to Plymouth, Gosport and the Isle of Wight; but that ginger and Jamaica pepper are sent back to Jamaica, Muscovado sugar to the sugar colonies, olive oil to the Mediterranean, oatmeal to Scotland, in short, that many articles of hospital consumption are returned to countries of which they are the produce, or, in which they are found many per cent. cheaper than in the markets of Great Britain. A reference to the lists of hospital stores shipped for foreign service will serve to prove the fact; the reasons of the practice are not easily

comprehended. It is obvious that, if a commodity be cheaper, or as cheap in original cost at one place as at the other, and while cheaper, or as cheap, be equally good in quality, the expence incurred by freight or carriage is money thrown away, the risks of loss or damage are also incurred uselessly. Such mode of purveyance for hospitals in England, and such mode of supplying hospitals in foreign parts is not the most direct and economical that could be devised. It is probable that there are reasons for what is done; but, as they do not bear the ostensible marks of public utility, it is but fair to give the surgeon-general an opportunity of explaining them to those who may be disposed to doubt of the necessity or propriety of the practice. The practice still exists, and, as it seems strange, the existence of it may probably be doubted; it therefore will not be deemed superfluous to add a short note of illustration and proof of what is asserted on this head.

When the army depot was transferred from Chatham to the Isle of Wight in the year 1801, the author of this work, charged with the direction of the medical department of that establishment, and desirous of conducting the part of the service intrusted to his care with due regard to economy of public money and just attention to the wants of the sick, found, upon inquiry, that the markets in the Isle of Wight were capable of supplying every species of provision and refreshment wanted for hospital purposes of good quality, and at prices not exceeding the prices of the London market. As this was ascertained to be the case after correct examination of the relative circumstances; and, as the author was not aware of any secret clause which bound the purveyance of mili-

tary hospitals to the London market, the necessary supplies were in consequence procured at the markets in the island. The advantages were obvious; there was no expence of insurance, freight or carriage; no chance of damage, leakage or waste in store. The supplies were provided only for short periods according to requisition; every thing was fresh and sound; and, as the quantity ordered was calculated according to the probable demand of the week, it was usually consumed, or nearly consumed at the just period; so that the accounts, possessing a clear and precise voucher, receipt and expenditure justly balanced with each other, were capable of being exhibited for inspection at any time, shewing a correct calculation of the hospital expence of one man or of the whole during any given number of days, weeks or years. If the articles of hospital consumption be equal, or nearly equal, in price in the Isle of Wight and in London, it is self-evident that the person, who, residing in the Isle of Wight, subsists on the produce of the spot or commodities of the island market, lives cheaper than he who transports the same commodities or articles of necessity from London. It is not easy to say precisely what may be the difference in the amount of subsisting one man or any given number of men in the two cases; it is plain it will not be inconsiderable;—in a distance of near one hundred miles probably not less than ten per cent. The greater number of the articles of hospital consumption are bulky and heavy in proportion to their value; and, as they are transported to military hospitals as on a private account, the expence of transport can scarcely be supposed to fall correctly into the economical channel of the merchant who deals in the gross, and calculates all his steps with a direct view to gain; hence, the expences of freight,

carriage, package, wharfage and other contingencies may be allowed, without exaggeration, to raise the price at the point of consumption to an advance not less than what is here supposed. There is thus evidence of unnecessary waste in the one case; there is demonstration of positive saving in the other. The plan mentioned is a plan of economy: it is that which was adopted by the author at the hospital of the army depot, but it existed only for a short time. It was censured by the surgeon-general as a bad practice,—for what reason is not known; and it ceased when the author resigned his official situation. The principal transportable articles of hospital consumption were in consequence sent from London to the depot hospital, or from Gosport hospital, to which they had been previously sent from London. The tradesmen and dealers in the Isle of Wight felt a disappointment; for it must not be supposed, that though they furnished a comparatively cheap market, they made no profits in their dealings with the hospital department. One of them (the principal one in fact), some time after this change had taken place, presented proposals to the members of the army medical board, offering to supply the hospitals in the Isle of Wight with the articles of consumption comprehended in his trade at prices lower, than the prices of the London market, and of a quality unexceptionable, as subject to trial in all cases by persons of supposed competent knowledge. The proposals, transmitted by the person alluded to, not being noticed by the surgeon-general, the acting member of the medical board in matters which concern general hospitals in Great Britain, were afterwards conveyed to the then secretary at war in a letter of which a copy is subjoined. This is the fact, and in spite of this fact and evidence, the supplies for the depot hospital still continue to be sent from

London or from Gosport—The then secretary at war probably saw reasons, for permitting the continuance of this demonstrably expensive mode of purveyance, which are not obvious to the uninformed public.

*Copy of a Letter from Mr. Steane to the Right Hon.
Secretary at War.*

“ SIR,

“ WHEN the sick belonging to the medical army depot arrived here from Chatham, I had the honour of supplying the same with wine, spirits, porter and beer, I flatter myself to the satisfaction of the medical person then at the head of it. Importing my own spirits, wines, and rectifying my spirits of wine, and also purchasing a quantity of London porter, it stands more in my power to sell those articles of merchandise at a cheaper rate, than they can be procured from London, and a consequent large saving to government of not only the price and the article, but the carriage as well as risk and insurance—in war most especially so. From my general knowledge in business, and having ever since the army depot was stationed in this island furnished the medical drafts, of course knowing the prices they give for their goods in London, it appears hard they should use the London market for their wines, spirits and porter, when they can have them for 4s. per gallon less, and fully of the same quality: and as what I furnished the hospital with formerly was perfectly satisfactory, I feel it sore it should be drawn from me. Annexed are my prices at the time the spirits came from London, and opposite are the prices charged for what was bought in London. The quality I most positively de-

clare the same. As I, in common with the other inhabitants of the island, bear a liberal share of the burdens attached to the war, I presume, without wishing to offend, I have a right to a share of the advantages arising from the same. Whilst I can do the business better than it is now done with a considerable saving to government, the matter must hold itself of considerable moment to every one, especially at this crisis of our country. This reason, Sir, has induced me to come forward with the present address, having been recommended to do so by a part of the head of the medical staff in London *, to two † of whom I have made tenders without having any reply, and knowing the high situation you hold and the great stake you have in the country, you will the more readily attend to the tenders of individuals, where it is attended with so much public economy.

“ With due respect,

“ Your obliged and humble servant,

“ JOHN STEANE,

Newport, Isle of Wight,

July 16, 1803.

“ Distiller and Merchant.”

<i>John Steane's Prices.</i>		<i>London Prices.</i>	
25 per cent.—Cogniac brandy	- 18s.	Cogniac brandy	- - - 22s.
ditto. Jamaica rum	- - - 14s.	Jamaica rum	- - - - 18s.
ditto. Rotterdam gin	- - 14s.	Rotterdam gin	- - - - 18s.
ditto. Spirits of wine	- - 13s.	Spirits of wine	- - - - 18s.
10 per cent.—Port wine per pipe	80l.	Port wine	- - - - - 86l.

“ N.B. The above are now my prices, the new duty to be added to them—no carriage or risk; and if not ap-

* Believed to be Mr. Knight.

† Consequently the physician-general and surgeon-general.

proved, immediately changed without any expence to the public. The porter I will deliver with a saving of 8s. per hogshead for carriage, and from the same brewer, viz. Felix Calvert and Co.—quality the same.

“ J. S.”

It may be proper to remark in this place that the saving, arising from closing with the proposition of Mr. Steane, is not less than twenty-five per cent. in all the articles of spirit, ten in wine, and about ten in porter, or eight shillings and eight-pence per hogshead. Mr. Steane's price for Calvert's porter, delivered at the hospital, and warranted sound and good, was 4*l.* 12*s.* at the time stated, the London price 4*l.* 7*s.*; freight and wharfage 9*s.* 8*d.* carriage from the wharf to the hospital 2*s.* freight of the cask returned 2*s.*: the whole 5*l.* 0*s.* 8*d.* It is evident from this statement that there is a saving of eight shillings and eight-pence on every hogshead of porter, as purchased on the spot, or as sent from London for the use of the hospitals in the Isle of Wight by order of the surgeon-general. If the savings be such as noticed in the articles specified, it may be reasonably presumed that they will not be altogether inconsiderable in other articles of hospital consumption. This relates to original cost. When the price of a commodity is equal in London and in the Isle of Wight, it is plain that there are many causes which serve to enhance it in the course of its transport to its place of destination. It is to be borne in mind that stores, of the nature of hospital stores, sent from London to distant places by water, are liable to pilferage in various ways. This, though it may exist, cannot always be detected or brought home: if detected, the trouble of

going through the whole steps of the process of detection is great; the expences attending the suits of recovery probably greater than the actual value of the loss sustained. The chance of pilferage is smaller in land carriage; but the expence of land carriage, for the bulky and heavy articles of hospital consumption in a distance of near one hundred miles, must necessarily form a great addition to the original price. This is a matter of some consequence; and there are still others which deserve consideration in estimating the character of the practice which now obtains. It is customary, where the supplies of hospitals are sent from London to distant places, to form a calculation of the probable consumption for several succeeding months. It is commonly known that many of the articles of hospital consumption are of a perishable nature; and such being the case, it is often seen that their qualities are impaired before it comes to their turn to be called into use; consequently they are to be condemned formally as unserviceable. It is self-evident that the amount of loss, arising from such acts of condemnation, cannot be considered as insignificant in hospitals possessing large magazines supplied at distant markets. It is demonstrative that it is incurred unnecessarily in the present case; it would be every where precluded by closing with contractors, on the spot, offering the best commodities at the lowest rates. The case, as it now stands, may be thought to deserve the consideration of those who superintend the money concerns of the nation. The practice existing implies a palpable and demonstrative loss; those in office, who have the power of commanding the authentic documents, may ascertain the precise quantity; the view of the author goes no farther than to state the fact.

There is still another matter, relating to the medical Depots. expence of the British army, which may be noticed cursorily in this place, though it has only arisen from a temporary cause, and it is to be hoped will possess only a very temporary existence. The apprehensions of invasion, which prevailed so strongly in the minds of many people in the early periods of the present war, produced great sensations generally, and, among its other effects, called forth exertions of great magnitude on the part of the surgeon-general. He created an entire system of provisionary means, medical, surgical and economical, erected depots, disposed stores and professional officers in all the great districts, and near all the probable points of attack. It would be uncharitable to doubt of the patriotism of the intention; it is a public duty to examine the necessity and utility of the measure,—its wisdom and economical frugality. It is to be observed on this head, that physicians, surgeons, apothecaries, purveyors, &c. were commissioned and appointed for general hospitals, the foundations of which were not then laid. Some persons may be disposed to think that this was even too much foresight for a wise man; others may think that it marked too great liberality for a steward of the public money. The hospitals did not in fact exist in form, or they had no patients; but the appointments were all substantial, the officers receiving their salaries and allowances as if in the full activity of service. But though the hospital structures alluded to were not yet erected, and though some of those which were erected were not occupied by sick, the depots in all the districts were filled with divisions of medicines, surgical means and hospital stores apparently ready for the exigences of the most active campaign. It is not denied that there is a possibility of circumstances

existing to render such a measure necessary: the conditions of this nation do not appear ever to have presented the necessity. London, the seat of government, the centre of the floating wealth, and the general depot of military and hospital equipments, possesses a direct and ready communication with the more important military stations on the coast; insomuch, that the communication being general and direct, the means, for the conveyance of medicines or surgical apparatus in case of exigence, regular and expeditious, the principal stations or encampments in Kent, Sussex, Essex and Suffolk, would perhaps be as soon, or even sooner supplied from the great depot in London than from the smaller depots at Canterbury, Chatham, Seven Oaks, Chelmsford, or St. Edmund's Bury. The communication is by direct roads in the one case, and the commission, on ordinary occasions, may be executed through the channel of a public conveyance: it is by cross roads in many of the other, so that the commission must be executed through a special messenger. London is the citadel, and, though not fortified in regular form, must be held as the strong hold of the country. It possesses a direct and daily communication with all the important military stations on the coast; possessing it, at the same time, in such perfection that supplies may be sent in twelve or fourteen hours, by means of common conveyances, to any of the posts within one hundred miles of the capital. This communication is direct and expeditious; and it will be secure as long as any thing is secure in the kingdom. If this be true, the plan, now adopted, of scattering depots of stores in the different districts, in the view of being contiguous to the military positions, can scarcely be supposed to have been called for by necessity. As the communication is generally

more easy and more certain between the capital and the military stations, than between the military stations and the medical depots in the district, it is plain that, as the measure resorted to on this occasion was not absolutely necessary in the first instance, so it is not positively useful in the second. If not necessary, and if not useful, as furnishing supplies with greater facility, it will not be difficult to shew that it is not wise in other points of view: it is not economical, as a measure calculated to husband with care and supply with judgment the treasures of the nation to national purposes. As London is considered to be the citadel of the kingdom, and actually is the great depot of hospital and other stores for the army, the communications with the advanced military stations are direct: as they are direct at present, it is essential to safety that they be maintained secure to the last extremity. The different military districts are not so organized in themselves, as to maintain an independent war when cut off from communication with the capital. If an enemy land in force, and the case is possible, it is also possible that he may make such progress in his course as to throw the affairs of the advanced posts of the district into confusion. The medical concerns of armies, as the most loosely organized and the least protected, may necessarily be supposed to participate of the confusion in the first and greatest degree; and, as the medical depots are frequently established at places of no internal defence, it is not improbable but that they will be abandoned to the enemy at an early period of the alarm. If this should happen, and it is by no means unlikely to happen, the depot will afford no aid to friends: on the contrary, if the enemy make progress, he will find in the medical depots many succours for his wants. It is a rule of radical wisdom in war that the

military resources be collected and secured in such central situations as possess direct and easy communication with the various advanced military stations; hence, it must be admitted that the measure of scattering depots of stores in various unprotected places, without cause of urgent necessity or demonstrable utility, is not well considered: it exposes, to the chances of capture, those means which are valuable in themselves, and which are useful to the enemy if they fall into his hands. The case in question implied no necessity, and, when duly examined, promises no utility: it is not sanctioned by the convictions of a provident wisdom. On these grounds it has no support; and these must be considered as the grounds which determine its essential value. If not necessary, it must be deemed superfluous; if viewed on the grounds of economy, it must be deemed wasteful.—The expence, incurred by the appointment of the medical staff and its appendages, by the transport of stores to the various places selected for the depot of stores, by the hire of houses for the reception of the stores, &c. is literally a dead expence; for it is incurred on account of a measure which is not necessary or useful. But besides this daily accruing expence on account of salaries and house-rent, the expences of preparation and package of medicinal drugs may be supposed to amount to no inconsiderable sum. This is literally waste; for, like the other, it is incurred with no useful purpose in view. It may indeed be fairly inferred, that the whole, at least the greater part of the equipment, as prepared without necessity, will decay and perish without being applied to a purpose. The greater number of drugs, particularly compounded drugs, and of these there exist many prepared in doses for immediate use, lose their virtues by keeping; insomuch, that it is more than

probable, that, at the end of two years, one third or more of the medicinal depot will be an absolute *caput mortuum*. Hence it may justly be said, that whatever be the amount of the expence incurred by this singular measure, it is an expence completely thrown away;—no one will reap benefit from it, except the contractors.

D. The enormous and ill-measured expence of military hospitals, lately so prominent in the army estimates, first made its appearance under the administration of the present army medical board ; at least under the management of the present physician-general and surgeon-general, for the appointment of the present inspector-general is of a late date, and the regulations, which he has established for the management of that part of the medical duty of the army which has been assigned to him, are indisputably economical. It is a necessary previous remark, in proceeding to consider this subject, that the support of regimental hospitals called for no extra expence in America, during the American war, exclusively of the allowance of a contingency of the sum of fifty pounds per annum in times of actual service, placed under the control of the officer commanding the corps. It is even known that, so late as the beginning of the year 1793, the sum of thirty pounds per annum was the whole of what was allowed in Great Britain for the hire of a regimental hospital, salary of nurse, and the provision of such articles of comfort and refreshment as the funds of the sick soldier were not supposed to be capable of procuring. The contingent account was then limited : the discretionary contingency, which swelled to a great magnitude in the course of the late war, owes its origin to the sickness which prevailed on the continent in the latter end

Hospital
stoppage.

of the year 1794. The load of sickness was then pressing and grievous; the weather was wet and damp, or frosty and intensely cold; the sufferings of the soldiers were great, and the mortality was alarming. It was suggested, in the midst of this distress, by some persons of authority who were not well skilled in the science of medicine, that the use of port wine, administered liberally at early periods of disease, would contribute eminently to save the lives of the soldiers who were suffering under this afflicting malady. As backwardness to relieve the wants of the sick was never imputable to any British commander, though means have been sometimes mistaken and misapplied, an order was issued immediately in consequence of the recommendation, authorizing surgeons of regiments to supply the sick with wine according to their discretion, and to draw on their respective paymasters for the amount of the cost. The rule, which was introduced in this manner in Holland in the year 1794, was brought over to England with the army which was withdrawn from continental service in the spring 1795. A custom, so originating, grateful to depraved artificial habits, and supported in reasoning by the fashionable medical doctrines of the times, grew rapidly and attained an enormous magnitude in Great Britain in the course of a few years. The motive, which prompted the measure, was humane; the effect was unfortunate. A superfluous expenditure of means was the consequence of the discretionary latitude granted to regimental surgeons on this head; for the surgeons were not all well instructed in the genuine principles of medical science, and the temptations, which lead to irregularity and incorrect conduct, were perhaps greater than some of them were capable of resisting. There was an immense ex-

penditure in the whole, and there were even grounds to believe that there existed on some occasions culpable errors of considerable extent. It may be added farther that this liberality to hospital subjects, which was sometimes so indiscreetly used, was not necessary in the scene where it originated. The assertion is bold; but it may be considered to be proved, if an example can be produced exhibiting a more correct effect without the bounty alluded to, than was generally manifested with the help of it. This example is found in the medical history of the third regiment of foot or buff, during its service on the continent in the year 1794 and 1795. The sickness, which prevailed in that corps, was of the same nature and in the same extent as in the other regiments which were acting in the same field. The same privilege of a contingent hospital account existed for it, as for others: it was scarcely, at least very sparingly touched, yet the effect of the hospital management might be ranked among the most fortunate*.

The author of this work had been aware of the evils of indulging, or rather of loading sick persons with superfluous quantities of meat and drink from an early period of life. He had seen the mischiefs of excess, and the advantages of correct measure in considerable fields of experience. Instructed therefore, of what is right by his own observation, he has generally, where intrusted with a medical charge in the army, required a commuted ration, estimated *ad valorem*, as the means of hospital

* A daily sick list, between September and March, amounting from twenty to sixty cases of genuine contagious fever, two instances of death from such disease, and two dozen and a half of port wine, charged to the contingent account during that period.

subsistence; or, a sum equivalent to the value of the ration, or to the usual mess contribution, as supplying those means at the market. Such is the rule, and he has the satisfaction to add, that his calculation is found, in trial, to be capable of answering the useful purpose in all ordinary cases of sickness among military subjects. He has seen it proved regimentally in variety of service: he saw it proved generally in St. Domingo among troops of different descriptions in the year 1797: it was proved in the example of the Russian auxiliary force, which was sent to act with the British troops in the year 1799: it was adopted, and proved more decidedly at the British army depot in the year 1801, under circumstances as untoward as any that are likely to occur in any service. The diet, and every other refreshment at the depot, was abundant, and of the best kind: the expence of it, and of every other thing which the conditions of the sick required, was defrayed at a sum somewhat under ten-pence per man. The rule acted upon in this case was formed from preceding experience. It was now proved in trial, so as to appear demonstrative in all its parts; but, demonstrative as the example was, it is not supposed to be the example, which, attracting attention, produced imitation through the whole regimental establishments of the army. This probably has another source. It is known to all persons connected with the army, that regulations were formed and published in the year 1803, detailing the management of British regimental hospitals; that the stoppage from the soldier's pay, on account of hospital subsistence, was increased from six-pence to ten-pence, and that the discretionary allowance for contingencies was annulled. This is ostensibly the work of the present inspector-general. It is a work for which he deserves thanks; the

public saves money by it, and the soldier is himself benefited. When the military pay amounts to one shilling per day, and the hospital stoppage is no more than sixpence, the soldier finds himself rich, that is, in possession relatively of a large sum of money at the termination of a tedious illness. The saving, or hoarding of money, is a rare occurrence with those who receive pay by the day; and, as the practice of accumulating from a source of daily pay is not usual, so the accidental possession, when it does occur with persons in this predicament, proves, for the most part, to be an irksome companion. The soldier, grown rich in this manner by unavoidable savings during his confinement in hospital, is insensibly drawn, when he obtains his liberty, to assume a course of dissipation in order to get rid of his superfluous riches. This is the soldier's usual course; and this being so, it is well known that acts of dissipation frequently occasion a recurrence of the former malady; it is demonstrative that they often lead to practices which generate new maladies of a different nature. These chances lie before the thoughtless soldier; and, of such the majority of armies is composed. Hence it is that the large saving of money, which accrues to the soldier by a long confinement in hospital, serves to feed the hospital with real subjects; it even serves in some degree to fill it with malingerers. It has been seen sometimes, not often it must be confessed, that the common soldier calculates the chances of gain which fall within his lot with a keen perception, and practises them with a determined effrontery, contriving the means of being admitted into general hospitals with a view of adding to his fortune. The general hospital stoppage gave to the soldier a clear gain of sixpence per day in plain calculation, and general hospitals

in modern times are known to supply a sumptuous board for a military malingerer;—hence it is not surprising that the sensualist and the usurer should endeavour to be admitted into its lists.

In viewing the subject of hospital stoppage, it may be thought to be in some measure worthy of notice in this place, that, while it was provided by the regimental hospital regulations published in 1803, that ten-pence should be paid daily into the hospital fund by each hospital patient for the purpose of defraying the expences of diet, washing and other contingencies connected with his support and entertainment during sickness, no change was made in the amount of the stoppage from the pay of those who were received into the general hospitals of Great Britain. This was certainly an oversight; more strictly speaking, a contradiction on principle. It presented inequality of condition,—a difference of pecuniary advantage attaching to two persons in the same service, under medical treatment in the hospital establishments of the same nation. As such it was unequal, necessarily deemed unjust, and liable to produce evil by its effects. Its incongruity was represented at the War-office through a military channel, in the latter end of the year 1803. The suggestion of incongruity and the propriety of equalizing the stoppages from the soldier's pay throughout all hospitals, whether general or regimental, proceeded from a zealous and intelligent medical officer, charged in the year 1803 with the inspection of the southern district: the measure so suggested was carried into effect by the recommendation of the experienced and much respected officer who had the chief command in the district at the time.—It may seem fo-

reign to the present subject to notice the incongruity of a transaction which has ceased; but, as the uniformity of hospital stoppage was in a manner forced, resulting from a foreign interference, it serves among other things to prove that there exists no principle of systematic organization in the constitution of the army medical board. The parts of this body, heterogeneous in their nature, run counter in action in quality of their heterogeneous nature, acting frequently in opposition to each other to the prejudice of the public service. Hence it is that this, and such other suggestions as are carried into execution by military interference, are only as patches in a ragged garment. The British medical code has yet found no foundations on general principles of science; and, till such be the case, its actions cannot be expected to move harmoniously, or its effects to be beneficial in the community to the extent of the benefit which belongs to the medical art.

E. The business of purveying and keeping accounts Accounts for a military hospital, such as Chatham, Deal, Gosport or Plymouth, appears usually to have employed a purveyor or deputy purveyor, one or two clerks, a store-keeper and steward, three or four ward-masters, a clerk or two clerks, and, in some instances, a clerk for the diet-tables of each physician or surgeon doing duty in the hospital. It must be evident to those who have studied principles in conducting the affairs of the sick, that the greater number of these persons cannot be otherwise than idle; or, that they are employed in doing things which are not necessary to be done, consequently which are superfluous in their nature, and which, as such, occasion embarrassment in place of giving aid in the execution of the common hospital business. In regimental hospitals,

the regimental surgeon arranges the medical and economical duties in the way which seems most convenient and useful for the service, allotting to his medical assistants and hospital sergeant or steward the execution of those parts of duty best adapted to their powers and qualifications. The trouble of forming and filling up the diet-roll at the commencement of the week, with the attention required in marking the changes of diet, as necessarily following changes in the circumstances of disease, cannot be regarded as inconsiderable : in an hospital containing thirty or forty patients it may necessarily be supposed to occupy a large portion of the surgeon's time ; and, as it is an instrument exhibited for inspection, it becomes, or may be supposed to become the major object of his attention. It comprehends that part of his labours which is most accurately scrutinized for the sake of detecting errors, and in this manner the medical object, which is in reality the grand object of the regimental surgeon's office, is placed in the back ground, the attention drawn from the study of the healing art to the study of exhibitions of book-keeping, as the qualification of a house-steward. If this be the fact, the existing practice may be thought to imply an error in principle,—an error incurred, in the opinion of the author, without cause of necessity. It is proved, by what is stated in the preceding pages of this work, that the detail of the hospital diet-table arranges itself under the rule of classification, recommended as a measure of medical discipline ; consequently it follows as an effect of the just execution of the medical duty with such simplicity and precision, as to be reduced to three figures of information. The accuracy of these figures, confirmed by the signature of the acting medical officer, as verification of the truth, presents an

order complete in form, and armed with authority for execution. The advantages of the plan pointed out in the present case, which is that which was acted upon at the hospital of the army depot in the Isle of Wight, are obvious in the view of saving labour; the effect, resulting therefrom, is also correct and systematic as implying an arrangement of materials by their classes. The practice of the system recommended exercises the mind in forming discriminations of the conditions of the sick on medical grounds, serving thereby to sharpen the discernment, and insensibly, but surely, to engage and solicit the diligence of the physician or regimental surgeon in the performance of his duty. The great aim of his labours is directed to a medical object,—the treatment of the sick; the economical purpose follows as a consequence of a just medical view. The practice existing implies a great deal of trouble in the first instance, it divides or obscures the object in the end, so that the treatment of the sick is, as it were, sunk in the shade, the preparation and exhibition of the diet-roll standing prominent in the eye,—detailed circumstantially and nominally with great exactness. It is not easy to discern and appreciate the advantages which result from the practice now enjoined. If it be thought that the exhibition of such detail furnishes a test of the regimental surgeon's knowledge; or, if compliance with the rule be intended to operate as a check upon propensities to deviate from the straight path of honesty, it may be fairly said that the measure will not be effective of purpose in either case. If the surgeon of a regiment be not qualified in knowledge to apportion the hospital diet in a skilful manner, at least in a manner which is not injurious, he has been appointed to his office without examination, or without due regard to the good

of the service; consequently, he cannot be permitted to retain his place without injury:—the permission sanctions openly a continuance in error, at least it leaves a door open to its operations. As the surgeon, who requires drilling in this simple and radical knowledge, is not fit for the surgeon's office; so, if instructed in knowledge, he possess a propensity to deviate from the direct path of honesty without the threatenings of this official check, the case is worse; the remedy provided is not adequate to the cure. The statement of diets alluded to as prepared for inspection is only a paper exhibition, liable to be moulded with a fair exterior though it be not fair internally. The diet-roll may correspond with the instructions of the inspector-general in all the essential points of form; but there is no rule, besides the surgeon's knowledge and integrity, which ensures the correspondence of the medical returns with the truth. The existing control implies no indispensable examination, and accredited verification by persons on the spot, competent to judge, or to strike a balance between cause, means and effect. Such provision is essential: it is that which constitutes the foundations of the only rule of control, which is capable of giving validity to examinations and quittance to public accountants on sure grounds of right: it is plain to whom it belongs.

Form of accounts.

F. The writer does not pretend to be correctly acquainted with the manner in which hospital accounts were exhibited, examined and controlled in the American war; or, at what time the purveyor received quittance from his purveying transactions. The method, which had been followed in the American war, appears to have been adopted at the early periods of the war 1793. The accounts were not then examined and acquitted at short dates, probably not settled, and finally acquitted for years

after the actions had ceased. The delay of examination implied the necessity of an immense collection of materials, as vouchers of fact; the preservation of so many documents was troublesome; there was risk of loss, and expence of transport on a multitude of occasions. There here existed evils decided and demonstrative in their effects, as relative to trouble, expence and uncertainty. But while these evils are obvious and of considerable importance, it is probable that others arose out of the delay of no inferior consideration. It is not unfair to suppose, for the foundations of the supposition have a place in the constitution of human nature, that the knowledge of the fact that the public accounts were not likely to be examined till after a lapse of years served, on many occasions, to relax the restraints of honesty with those who were appointed to act;—the delay was an evident and indisputable cause, which diminished the chances of administering a just correction by those who were appointed to judge. If the responsibility be removed to a distant period, the restraints which belong to fear are diminished; the rigid proof, comprising contrast of cause and effect by ocular evidence is not obtainable; and, while this is the case in fact, a certain, and not a small expence, is entailed in the appointment of clerks and commissioners for the purpose of methodizing what is confused, and illustrating what is dark and difficult to be understood. These amount to a numerous host as things now are; they would have no existence, if the control were executed according to the plan proposed in this place; for there would then be no mystery or complexity in the transactions. It will not be denied by any one who considers the subject with attention, that the plan proposed in this place is eligible both on account of

economy and authenticity; but, though eligible and easy of execution, should it not be adopted as the general rule of practice, the next remedy left in the power of those who are intrusted with the medical charge of military hospitals must be resorted to, as the means of reducing their official acts into correct order for the purposes of examination and control at a remote period. This consists in methodizing and reducing into a condensed tabular form the scattered materials of hospital expenditure, certified and vouched by those officers to whom the care of the sick is actually committed. Those persons, by whom means are ordered for the use of the sick, and by whom the application of the means to the purpose is ascertained, constitute a board for the verification of the hospital transactions. This mode of examination and verification, as depending on a board of medical officers with a president, was, it is believed, first introduced into British hospitals in the year 1795, at the time the author assumed the direction of the medical department of the army which was then on the continent. An abstract of the detailed account of expenditure was there arranged in a tabular form, explained and vouched by the medical officers to whom the charge of the sick was intrusted. When so explained and vouched, the condensed and methodized account was certified to be correct and true by the president, senior officer, or military superintendant in cases where a military officer was attached to the hospital as superintendant of its economy. This methodized, condensed and correct table of expenditure was put into the hands of the purveyor as a valid voucher of hospital expence. The form here alluded to, the rudiments of which were cast on the continent in the year 1795, was improved in succeeding years. The

purpose was more distinctly specified, the application more decidedly ascertained by more explicit contrasts of cause and effect. It was acted upon at the hospital of the army depot in the Isle of Wight. The effect is executed in this case by an easy operation, and with perfect accuracy in its details. If the periods fixed for examination be short, viz. weekly, there will be no possibility of error from ignorance of circumstances; and, if the control of the military officer present on the spot be admitted as competent authority to examine and acquit, the hospital accounts may be supposed to be extinguished, not liable to be afterwards touched by the hands of public commissioners, for, where the expence of the hospital is wholly defrayed by deductions from the soldier's pay, the control of public commissioners cannot be supposed to be necessary, not even to be admissible.

The concerns of those general hospitals which are within the kingdom of Great Britain are committed to the surgeon-general; the exhibition of accounts is consequently submitted to this officer for examination and approval. The forms, from the little which the author knows of them, do not appear to be well digested;—the means and the effect are not explicitly contrasted. The inspector-general of regimental infirmaries is empowered, according to the existing regulation, to examine and control the expenditure of money appropriated to the support of the sick in regimental infirmaries. It is believed that the duty is executed rigidly and correctly; but, while this is the case, it may be observed at the same time that, though there was cause for vesting such power of control in the inspector-general, when a bill of

Propriety of
military
control of
hospital ac-
counts.

contingencies was allowed to be brought against the public on account of the support of regimental hospitals, the necessity, and even the propriety may be supposed to cease when the support of the soldier, during sickness, is defrayed wholly by his own funds. The control devolves then to other hands, expressly to the regimental officers, as to persons who have correct knowledge of the subject as persons on the spot, and who are constituted guardians of the soldier and his property in virtue of their commissions. The regimental surgeon is the executive officer, supposed to be qualified in knowledge to execute the duty previous to appointment to a trust so important; the commanding officer of the corps must be supposed to be qualified to judge, whether or not the surgeon executes his duty correctly and honestly according to sanctioned regulations. This formerly was the case; it has been changed recently. It may probably be alledged, in support of the rule now introduced on this subject, that the trust of hospital control was not always well executed in military hands. It is not maintained that it was; but, while this is admitted, it is added at the same time that, if the surgeon failed, or turned aside from his duty without being discovered or checked by the officer commanding, the error was an individual error, punishable as a private delinquency;—the existence of it does not affect the truth of the general principle on which the former rule was established. A military man is undeniably competent in knowledge to execute the control in question; in short, the execution of the duty seems to be naturally and directly vested in the office of commander of a corps. If neglected, the officer forfeits his right to command a

regiment; if deprived of it, he is deprived of a part of his command. If the case be considered attentively in all its circumstances, the propriety of re-establishing the regimental control of the money expenditure of regimental hospitals presents itself in a strong point of view. The deduction, which is made from the soldier's pay on account of hospital subsistence, not only defrays the current hospital expence, but leaves in many cases a considerable surplus balance unapplied. The surplus is the soldier's money: the regimental officer is the eye-witness of the soldier's wants, and, officially, the guardian of his property. He is reasonably supposed to be the proper judge of the most suitable manner of relieving his wants; and, as guardian, he is the person on whom the soldier's eye is uniformly fixed:—the cause which obscures this object may be considered as a step which leads to military disorganization. It is natural, at least it is right to believe that the officer is interested in the good of the soldier; for, if he knows his own interest and consults the stability of his military reputation, he will consider the soldier's concerns as his own. As it is demonstrative that the motive of interest prompts him to be kind, and, as it cannot be supposed but that his knowledge is such as to qualify him to discover the just occasions for the exercise of kindness, and to judge of the fitness of means in application to purpose, it is a direct inference of plain sense that he be constituted officially the sovereign of all his concerns. But while constituted in this manner the legal and direct guardian of the soldier, and arbiter of the application of his means for useful purposes connected with his official functions, he is, at the same time, to be considered in the light of a guardian,

accountable for correct application, and bound to exhibit a detail of what is done in regimental orders, at regular and fixed periods, for the information and satisfaction of the parties concerned. The regimental orderly book is a military record of orders and transactions which relate to the corps; and in which are explained the soldier's relations in his military sphere. If it be deemed necessary, and it seems to be no more than justice, that the soldier be informed in what manner the money deduction made from his pay, during his sickness in hospital, is applied to his use and benefit, no one can be supposed to explain it to him with authority except the regimental commander; for the channel of communication and official record is open to no other. The regimental commanding officer has thus the power, by means of the orderly book, of laying the statement of the soldier's concerns, with evidences of its authenticity, before the regimental tribunal. Every one interested has thereby the means of ascertaining the truth; consequently of experiencing the satisfaction which arises from a conviction that justice is done to him. This is fair in all its relations, and useful in all its views. It is by such means that the authority of the commander is preserved, and the confidence of the soldier ensured. The soldier occupies a defined station in the military fabric, and it is indispensably necessary to the good order and permanence of the structure, that the parts be maintained in their stations, their rights inviolably secured, their duties and concerns intelligibly explained; among others that the hospital accounts be stated correctly, the details laid before the hospital subjects with authentic evidences of the effect. If this be just in principle and proper in military arrangement, it is evident that it cannot be executed

satisfactorily and with effect, cannot even be attempted to be executed without danger to military organization and discipline, through any other channel except that now mentioned, viz. the record of the regimental orderly book, or the notification of a general order.

indefinitely and with effect cannot even be attempted to be carried without danger to military organization and discipline, though any other plan except that now proposed, viz. the order of the regiment already in use, for the purpose of a general order.

It is proposed to have the order of the regiment as follows:

1. The order of the regiment as follows:

2. The order of the regiment as follows:

3. The order of the regiment as follows:

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21. The order of the regiment as follows:

22. The order of the regiment as follows:

23. The order of the regiment as follows:

CHAPTER V.

Recapitulation.

IT is evident, in a retrospect of the preceding pages, that the just constitution of a medical department for armies, as constructed for one purpose, must rest upon one centre ; for its actions, in order to be consistent, are to be moved throughout by the impulse of one principle. The army medical board, which directs the medical concerns of the British military force in the present times, is a compound body ; and as such, possessing different centres or points of attraction and impulse, it manifests different forms of movement in its action as a consequence of the different properties of its constituent parts. The physician-general, surgeon-general and inspector-general, constitute the body called the board : they are three separate, and in some manner, independent powers. As such they may reasonably be supposed to possess different views and different interests : they act in different circles, and, acting from different motives, the action, as a whole, is jarring and discordant, erroneous or imperfect. It is a self-evident proposition that the care of the health of the national army is one object. The object, as relating to one subject, lies within the sphere of one

man's comprehension; one man will therefore best direct its operations in all their extent. If the directing power be divided, the actions cannot be supposed to be executed vigorously and consistently; for it is not seen with one eye and animated with one spirit in all its parts. The army medical board, as just now observed, is a body heterogeneous in its nature: it is without a head or chief in power; the arrangements which concern the health of the British army are notwithstanding committed to its care. Common reason, calculating upon a knowledge of the nature of things, would not encourage the expectation of harmonious movement and consistent effect: experience confirms in too many instances the truth of these reasonable expectations. It is self-evident that, if an official body consist of parts which are discordant in their nature and equally poised in power, the result in action is a contention against itself, at least a neutral effect, rather than an animated and united exertion for a common purpose. This is fair in reason, and it is true in fact in the present as in other cases; hence, with this truth, and the reasons of the truth before the eye, it is to be hoped that those who preside over the great concerns of the nation will see the propriety, even the necessity of directing such changes in the existing arrangement as may give the chief rule to one of the members of the board; for, otherwise there cannot well be harmony in operation, or

consistency in effect :—such change is essential to the respect of the medical profession, and the good of the British army.

As the parts constituting the medical board, or head of the medical department of the British army are equal in power, heterogeneous in nature and discording in views, so the subordinate parts or acting instruments, as partaking of the character of the source, are various and differently constituted, consisting of different classes of persons differently privileged and limited in their duties. Physicians, surgeons and commissioned apothecaries, independently of the class of regimental surgeons and assistant surgeons, compose the medical part of the British army. The regimental surgeon performs the daily duty of physician, surgeon and apothecary; and as such, he must reasonably be supposed to possess, in his own person, the knowledge which belongs to the different denominations of the medical officer in their higher or subordinate spheres. The business which belongs to the medical officer in armies is of one character and complexion; it is therefore common sense that the medical officer be qualified to execute all its parts in due order; and, if qualified to execute all its parts, it is common justice that he be admitted to a participation of all its ranks and advantages on a common basis of equality. Tried and established tests of merit, with requi-

site qualifications from experience and length of service are considered as the foundation of the rule of promotion. The execution of the duty belongs to the public : the cause of appointment to such duty has no other reasonable grounds of preference than the fitness of the subject selected ; if otherwise, the public good is sacrificed to private favour. As the health of the military force is indispensable to the production of effect in war, and, as the medical officers of armies are supposed to be the instruments of preserving and restoring the health of the military body, it is evident that medical officers are persons of value ; and being so, it follows, in just reason, that they obtain a respectable rank in the military fabric, suitable in degree to the importance of their station. If the importance of the station of the medical officer demand a respectable rank, it follows of course that it also obtain a salary adequate to its labours ; such as corresponds with its rank and station, not such, that with the rank of captain, the pay may be higher than that of the lieutenant colonel who commands the corps. This results from the rule now adopted of advancing the pay according to mere length of service without change of rank or duty. The rule is incongruous in its reasons ; it will be found to be inconvenient, perhaps injurious in its action. But while the amount of the surgeon's pay should be so adjusted as to preserve a correspondence with the rank which the sur-

geon maintains in the military fabric, it is also plain that it would be more convenient, if the pays which are now issued under different denominations, were consolidated and issued under one head; the rule existing is complicated and troublesome, serving no useful purpose which ordinary observers are able to discern, except the opportunity which it gives of employing agents and clerks for doing things or making transfers which are not necessary to be done or made.

The suggestions which are offered in this place may be thought to be suggestions of plain reason; they are proved to be true in experience as far as the experience of the author has extended. If the duties of the medical staff should be arranged according to the nature of the thing in its intimate relations, so the number should be estimated according to a just calculation of the real wants. This is common sense; useful both in a view to economy of money and production of correct effect. It is not so as things now are; for it may be said without exaggeration that two thirds of the hospital staff commissioned for foreign expeditions during the late war were positively superfluous, if superfluity be defined to be that which exceeds utility:—the evidences are incontrovertible; the calculation is exhibited in Table, N° I. and the case so exhibited is open to judgment.

Next to the constitution of a medical staff, the construction and equipment of hospitals offer room for remark. It must appear evident to any one who considers the subject with attention that the construction of military hospitals, as buildings calculated to receive persons suffering under sickness, owe their first property to the means of preserving a free circulation of air, so essential to health, but so liable to be lost, as stagnating and becoming corrupted where men, particularly men in sickness, are accumulated together within narrow bounds. The military hospitals in Great Britain are singularly contrived in respect to the means of ventilation. By the position of the window, the bottom part of which is ordinarily raised above the level of the floor to the height of the head of a tall man, the patient is prevented from turning his eye upon external objects. Such restraint may be supposed to be useful, though the purpose of the utility be not obvious to every one, but the effect is evidently connected with an inconvenience of great moment; for it leaves the lower atmosphere of the ward in a similar state with regard to ventilation, as if it were a dungeon six feet under ground. The plan of construction now submitted to consideration, though not described with sufficient technical precision, is the reverse of that now existing. It is intended by its principle to ensure a permanent and effectual purity of air, as the great quality of

a military or other hospital;—and in this view it is important.—The schedule of equipment next presents itself under this head, and it is believed, that what is now given is better contrived for adding comfort to the sick soldier than that which ordinarily obtains: the amount of the cost is also less, for the wants are more correctly measured. If this subject be duly considered, the just calculation of hospital stores, ordered for foreign service in distant parts, presents itself as singularly neglected in a review of the transactions of the late war. If the annual supplies be ordered on a presumption of what may be wanted, rather than supplied in correspondence with a specific requisition from those who are on the spot and know what actually is wanted, the waste may reasonably be supposed to be great; yet such seems to be the rule which is now followed. The comparative view of the schedules subjoined serves to give an idea of the unnecessary expence—incurred by neglecting to attend to the circumstances of the case. If the estimate be made according to the rule which appears to be adopted as the rule of action, the amount of the expence in a war of four or five years duration will be found to exceed, by two thirds or more, what is actually necessary, and what only ought to be *provided* for the public service.

It is believed that the detail, given in the body of this work respecting the medical management of hospitals, leaves no doubt in the mind of any one who considers the subject with attention, that the part of the business which relates to the management of the sick is capable of much improvement. The classing of sick according to diseases and circumstances of disease does not appear to be acted upon systematically any where in Europe; at least the process does not appear to be arranged by a simple and enlightened principle in the military hospitals of the British nation. It is evident to every one that the plan now recommended to the notice of the public, executed and proved by the author in various situations and countries, is calculated to produce a correct effect with a comparatively small proportion of means. The reasons are obvious, and the practical proofs are decisive. Besides classification of sick, the proper arrangement of surgical aid in the field, in the time of action, is also an important concern under the head of medical management which does not as yet appear to have obtained sufficient attention: the plan proposed will, it is presumed, answer the purpose so as to secure the assistance of the surgeon to the wounded soldier in the just time of need. The exhibition of returns of sick or non-effective in a given body of men, which is to be considered as the condensed history of cause and effect manifested upon animal structure, must

necessarily be regarded as an instrument of the highest value to the statesman or general. Constructed upon an enlightened principle, carried on through a variety of climates, and estimated comparatively under a variety of conditions of service, it presents important informations. It exhibits the sure grounds on which statesmen may be enabled to calculate with precision the quantity of means which are wanted for distant expeditions ; for it gives a faithful picture, in a condensed and tabular form, of the effects of the causes and accidents to which the service is exposed. As statesmen may learn, from a due consideration of this instrument, the amount of the means which may be necessary for a distant service, so the general will be instructed in the proper manner of applying his means with effect, as master of the history of the probable accidents which are likely to happen to his instruments. If he neglect the informations presented to him by the details exhibited in the returns alluded to, he will most probably fail in his enterprises ; and he will be culpable for the failure where it proceeds from his own inattention. When the value of such return is properly considered, the subject will, it is presumed, occupy the attention of economical statesmen and generals, who, knowing the value of their materials, husband the use of them with prudence, and guard the preservation of them with care. The consideration of the sick

return of armies may thus be held to be important, though it has perhaps as yet been little attended to by those whom it most concerns; the just calculation of number and proper disposition of nurses and attendants upon sick has also appeared to be worthy of notice, as standing among the objects which attract attention under the head of medical management. It is demonstrative that the number, according to hospital regulations, may actually be diminished by one third; the effect, as relative to those who actually require nursing and attendance, multiplied by one half as a consequence of the manner of disposition. No one will deny that the rule of calculating the expenditure of medicinal drugs and surgical means for the use of armies should be fixed by a just standard. The rule which was acted upon in the British army, during the late war, must be explained by those who possess better means of information than the author: it is visible in effect that the quantity was enormous; for, if the list of medicines and hospital returns of sick in foreign stations be examined and compared with each other, it will probably be admitted by those who are competent to form opinion in the case, that one part in six could scarcely be applied to use. If this be so, there exists an error which calls imperiously for a remedy.

The economical administration appears, as well as the other concerns of British military hospitals, to be capable of a more correct arrangement than that which now obtains, both as perfecting effect and as saving the expenditure of means. It is capable of demonstrative proof that the numbers of the servants of the economical administration may be diminished, the purveyors and matrons, as now constituted, may be entirely annulled as superfluous, if not embarrassing. The diets of hospital subjects, regulated by a correct scale, shew plainly that the value, of what is sufficient for the support of a man in health, is equal to supply the requisite quantity of what is suitable to a man in sickness, in ordinary cases of disease. If this be so, and the proofs are incontrovertible, all that which exceeds the just measure is waste. This, in British military general hospitals, appears, on some occasions, to have been prodigious: a reference to the numbers of sick compared with the expenditure of means shews the precise quantity. The arrangement, exhibition and control of accounts is another of the objects which is considered to be of much importance; but it does not yet seem to be so digested as to touch the useful point. The control alluded to is a control of figures,—the transcript of distant transactions, not of things verified by direct inspection on the spot. This is plain; the evidences incontrovertible. The medical inspection of hospitals

has also undergone a great alteration of late years, or rather it has arisen as an entire new creation. If the subject be well considered it will probably be discovered that it is not constructed upon a principle to produce an uniform and systematic effect;—the instruments are numerous, and, as they have not been formed on one model, their views may reasonably be supposed to be various or discordant. So constituted they cannot be expected to produce uniformity in action, and it is difficult to say in what degree they are to be regarded as useful. It is undeniable that the cheapest and most effectual way of executing the medical business of armies is by the selection of able regimental surgeons,—men who know their duties in all their extent. The process then moves on correctly without the inspector; it is a vain expectation to hope, if the surgeon be radically defective, that he will be instructed, or enlightened by the unimportant or cursory visit of the inspector's deputy.

If the subject of hospital management be viewed in all its details, it will be readily admitted that it is capable of improvement; and, if the importance of the subject be duly considered, the improvement proposed will strongly command the attention of statesmen. If there appear evidence, and it is believed the evidence is demonstrative and may be verified in a reference to the

authentic documents which are lodged in public offices, that two thirds of the means provided for the use of the sick in most of the expeditions which were undertaken since the year 1793 were superfluous—as exceeding the just needs;—viz. the medical officers so numerous, as not to have an opportunity of acting fully and effectively in their stations; the stores of medicines, &c. so excessive in quantity as to decay and perish in the magazines before there occurred an opportunity of applying them to their purposes, there exist strong reasons for a reform, and the plan now recommended, though not the most perfect that might be devised, will stand excused in its motive,—and perhaps escape with inferior censure for the conduct of its detail. It will not be deemed impertinent by those who regard the interests of the public with a just eye: the subject is a national concern, and the investigation is open to every honest subject of the nation. If error exists, its operation is injurious; if a remedy be attainable, it is a duty to make it known. The reform of error is not an innovation in the real meaning of things, though it has been styled so in the language of those who are prejudiced; nor is the man inimical to his country and the interests of humanity, who suggests such arrangements, as are calculated by the correspondence of things with each other in their natural and just relations, to move with harmony

and produce a correct effect. Such arrangement, while economical of means, produces a just and permanent action in all its stages. It is such as the author has attempted to attain.—The idea of the system, which is now explained and made public, arose at an early period of life; it was traced through many varying scenes of service, pursued in spite of difficulties and opposition till such evidence was obtained of its truth as may be considered to be demonstrative in all its steps. It is finished, and it may be necessary to add that, as the subject was prosecuted as an object of study, the results are now given to the public as a command of duty. The author has no private view nor prospect of advantage from the fruits of the publication: he gives it freely without expectation of reward; and, acting honestly and independently, though placed in a humble sphere of life, he is neither solicitous of praise nor fearful of blame in the course which he pursues.

THE END.

