
THOUGHTS
ON
HOSPITALS.

THOUGHTS

O N

HOSPITALS,

B Y

JOHN AIKIN, SURGEON.

With a LETTER to the AUTHOR,

By THOMAS PERCIVAL, M.D. F.R.S.

————— *Macies, & nova februm*
Terris incubuit cohors.

HORAT.

L O N D O N :

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MDCCLXXI.

T O

Dr. John Haygarth,

PHYSICIAN at CHESTER.

DEAR SIR,

WHAT name can I more properly prefix to a work intended to serve the cause of humanity, than that of a person who has ever shown the warmest concern for its interests? or whose favours ought I more gratefully to acknowledge than his, who by his social friendship cheered my solitude, by
his

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DEDICATION.

his knowledge enlarged my ideas,
and by his judgment corrected my
errors?

FROM both these considerations,
I beg leave to dedicate to you this
little piece, and desire you will ac-
cept it as a mark of the gratitude
and affectionate regard with which
I am,

DEAR SIR,

Your much obliged Friend

and humble Servant,

JOHN AIKIN.

WARRINGTON,
30 Nov. 1771.

THOUGHTS

ON

HOSPITALS.

TO counterbalance the various
evils and miseries of life, Pro-
vidence has planted in our na-
tures a benevolent principle, which,
without waiting for duty to incite, or
reason to approve, inclines us by an in-
voluntary emotion to relieve the distresses
of our fellow-creatures, and gives us the
purest and most sensible pleasure for our
reward.

NEVER were the rights of humanity
better understood, nor the feelings of
A compassion

compassion more indulged than in our age and country. Of this we have a pleasing proof in the rapid success attending every charitable institution. We have seen, within less than half a century, numerous edifices arise throughout the kingdom, dedicated to the support of the poor under the severe afflictions of disease and want—we have seen these amply maintained, carefully inspected, and diligently attended; and all this without any interference of the civil powers, merely by the generous and disinterested zeal of individuals. In the Metropolis many new designs have been set on foot for the relief of particular diseases and calamities; in the country general Infirmaries have been established at almost every considerable town, upon the most liberal and extensive principles.

AMIDST the universal diffusion of this amiable spirit, one thing alone appears wanting to compleat the wishes of humanity; and this is, that a proper direction

rection of the means, should accompany the well-meant intentions of doing good. Without a due regard to this object the most benevolent designs may be frustrated, and instead of a blessing, prove an additional misfortune to the afflicted.

HAVING turned my thoughts somewhat particularly to this subject, several reflections occurred to me which appeared of importance enough to be communicated to the public; and in any attempts to rectify errors or suggest improvements, I have no doubt of being favourably heard, by all who can discern a good intention even where they cannot agree with the opinion. And if in this little piece they shall meet with a freedom of censure in points which they may have regarded rather as objects of applause, they will not I hope, consider the Author's profession as having influenced him to inculcate opinions with an interested view. It is well known to the world, and with a conscious pride I repeat it, that no profession

or set of men have shown themselves so ready to offer their assistance to the poor, or so disinterested in promoting improvements in their art for the benefit of mankind, as the medical faculty. Their voluntary unpaid attendance on the numerous sick at Hospitals, their readiness to give advice to the poor at home, amply prove the former; their spirited patronage of inoculation, with every other means of prevention against diseases, their union into societies for the free communication of knowledge and improvement, sufficiently declare the latter.

WHOEVER has frequented the miserable habitations of the lowest class of poor, and has seen disease aggravated by a total want of every comfort arising from suitable diet, cleanliness and medicine, must be struck with pleasure at the change on their admission into a Hospital where these wants are abundantly supplied, and where a number of skilful persons are co-operating for their relief. On the other hand, when he walks through the long
wards

wards of a crowded Hospital, and surveys the languid countenances of the patients, when he feels the peculiarly noisome effluvia so unfriendly to every vigorous principle of life, and compares their transient effect upon him, with that to be expected by those who are constantly breathing them and imbibing them at every pore, he will be apt to look upon a Hospital as a dismal prison, where the sick are shut up from the rest of mankind to perish by mutual contagion.

THESE obvious and simple ideas answer in fact to the real state of advantages and disadvantages in hospitals. As far as diet, nursing, and medical assistance are concerned, they are of eminent use and comfort to the poor; but the grand necessary of life, air, is never to be had in a salutary degree of purity, frequently is vitiated so as to become a poison. Every hospital, I fear, without exception, may in some measure be considered as a Lazaretto, having its own

peculiar disease within it. That dreadful distemper, little less malignant than the plague itself, distinguished by the title of the jail or hospital fever, has long been known as the inbred pestilence of crowded receptacles for the sick, and has thinned our fleets and armies more than the sword of the enemy. Sir John Pringle, the great observator of military diseases, expresses in the strongest terms his dread of this fatal distemper, and his disapprobation of such a disposition of the sick in large general hospitals as is almost certain to produce it. When the same causes act in so inferior a degree, as not to occasion such alarming consequences, they are still far from being innocent. I am intimately acquainted with a country Infirmary remarkable for neatness, and excellence of construction, and I have even there very frequently seen a slow depressing fever, the offspring of putridity, creep over the patients other complaint, become the principal disorder, and resist every remedy that could

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be thought of, till dismissal from the house produced a spontaneous cure.

My design in offering to view facts of this kind, is not to inculcate a general and undistinguishing prepossession against these charitable institutions, but merely to show that there is a real necessity for extraordinary caution in their management; and that the present fashion of indiscriminately hurrying the poor sick into hospitals, and being busied with a benevolent zeal to fill them as full as possible, may be productive of consequences which are quite opposite to the kind intentions of humanity. I have no manner of doubt that they may be rendered eminently useful, and that the greatest part of their inconveniences may be avoided; and it is upon this conviction that I venture to offer to the public the result of some study and observation concerning them.

I SHALL begin with some general remarks on some circumstances with regard to the usual construction of hospitals

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which have a considerable influence over the salubrity of the air; and shall then proceed to the consideration of several particular diseases with respect to the propriety of their admission into a hospital.

THE various causes of vitiation of the air have been pointed out with great precision, and means of prevention suggested in particular cases by many of the improvers of modern practice. The great character several of their works have deservedly acquired gives reason to presume, that every medical reader must be acquainted with them; a recapulation therefore of their general doctrine would be useless, especially as many parts of it are not applicable to our subject. It is not to be supposed that any important mistakes can be committed, in a thing so well known and so much in our power, as the choice of a proper situation and exposure of a hospital with regard to the state of the air, as depending upon heat and cold, dryness and moisture,

ture, and the like external circumstances. It is in the laying out of the building, and the internal conduct of the house that we are to look for the source of those errors which may prove so fatal. In planning the building, two quite opposite and incompatible views are found to interfere. The architect considers it as his business to manage his room and materials in such a manner, as to accommodate the greatest number of people in the least possible space. The physician on the contrary would leave as much vacant space, occupied by the fresh air alone circulating freely, as was in any degree compatible with use and convenience. It is to the prevalence of the former above the latter that all our complaints are owing.

THE most common plan of a hospital is a quadrangle, the ground floor of which is appropriated to offices, and the stores above to lodging the sick, which are for that purpose disposed into long rooms running the whole length of the sides,

sides, and containing, according to the size of the building, perhaps from twenty to fifty beds ranging along the opposite walls. There are usually two common stories, and an attic story divided in this manner. The long wards seldom run along the four sides of the quadrangle, but only two or three of them. The rest is taken up with stair-cases and smaller rooms for particular occasions.

THE first fault to be observed in this plan, is the quadrangular form of the whole building, which prevents an effectual thorough ventilation, and causes a collection of stagnating air, tainted by a variety of noxious effluvia, in the central space, which continually returns upon the rooms through the windows looking that way.

THE disposition of the lodging rooms into long wards, is another, and a much more pernicious fault, insomuch that I would assign it as the principal cause of bad air in hospitals; and it is evident that this must be the case, from the very reason which led to the contrivance, viz.

that

that a large number might be lodged in a small space. Every person, even in health, by his breath and the effluvia arising from his body vitiates a quantity of air around him; and the only reason why we do not in general perceive any bad effects from the poison generated by this vitiation, is, that it is usually diluted with a large quantity of fresh air, and carried off by a free circulation. If the quantity of air be lessened, or its circulation impeded, noxious effects will be proportionally shown. The degree to which this may be done without producing any injury of consequence cannot be exactly ascertained; but there is no doubt that it must become hurtful, when such a number as from twenty to fifty persons, many of them afflicted with ulcers and other diseases which tend to aggravate the putrescency of the fluids, are constantly confined together in a room just large enough to hold their beds. The circumstance of continuing through the day in the room where they slept, is a considerable

considerable aggravation of the evil. The bed-cloaths acquire a strong impregnation from the perspired vapours of the night, as is evident on first entering the bed-chamber of a single person in health, and their soft porous texture renders them extremely tenacious of every kind of effluvia. It would therefore be a good regulation in every hospital, especially such as are in any degree crowded, that all the patients who are capable of sitting up, should remain through the day in large airy halls, and that their wards and bedding should in the mean time be as much as possible exposed to ventilation.

STILL however I am persuaded, that every precaution and contrivance to sweeten the air will be only palliative while the great sources of contagion, large crowded wards, remain in use. Sir John Pringle, indeed, recommends large wards for the military hospitals, but it is evident that he does it upon the supposition, that more proportionable void
space

space will be left in them than in small ones; for he lays it down as a rule, that so few patients should be admitted into each ward, that one unacquainted with the danger of bad air might imagine there was room for double or triple the number: a precaution I will venture to say, observed in none of our hospitals, since it would totally overthrow the *oeconomical* plan upon which they are built. It is true the first appearance of a large ward strikes us with an idea of somewhat very spacious and airy; but if we conceive for a moment in imagination, that it was partitioned into as many separate divisions as there are patients, we shall be sensible how narrow a space is allotted to each. It is a farther objection to large wards, that if a particular cause of contagion prevails, it is by their means communicated to greater numbers than it otherwise would be. The illustrious author above-mentioned relates an instance of the malignant hospital fever beginning in a ward, from no
other

other cause than a mortified limb of one of the patients. The contagion thus raised would probably go no farther than that particular ward—by its being small therefore the number infected would have been less. Various other circumstances, such as the mutual disturbance and terror arising among the sick from the shocking view of each other's sufferings, their agonies, raving and dying groans, all plead strongly with humanity against these dismal lodging places. I am at a loss for terms strong enough to censure a practice which, I verily believe, when followed to its full extent in a large and crowded hospital, is the source of more fatal consequences than the original diseases of the patients.

A WANT of due height in the wards is an additional cause of vitiated air, and is occasioned by the same plan of making the most of the room and materials. The attic story is built for this purpose, which by its disproportionate lowness is totally useless in itself and cramps the
subjacent

subjacent stories of their proper height. I could point out several expensive hospitals much injured by this circumstance, and, if ever they happen to be thoroughly filled, the mischievous consequences will probably be severely felt.

I AM aware that a different plan of constructing hospitals, especially in large cities, would be attended with a great increase of expence and loss of room; but this ought not to be an object when a point is under consideration, which is to determine whether or no these institutions be of any real public utility. There cannot surely be a greater contradiction in the nature of things than a disease produced by a hospital; and that such a disease is really known, that it has proved fatal to thousands, and in some measure prevails in every hospital, is a too certain and deplorable proof of important mistakes in their construction and management. If the utility of them in their present state upon the whole really preponderate, it is still placing
them

them in the rank of necessary evils, when one would hope they might be rendered unmixed and undoubted benefits.

It does not belong to my profession to lay down an architectural plan for one of these buildings, nor do I conceive it necessary. By pointing out what to avoid, we in effect give rules what to aim at. The danger of corrupted air in crowded close apartments will suggest the necessity of having them lofty, well ventilated, and thinly peopled. In general, the best plan would seem to be, a range of cells or small rooms opening into a wide airy gallery, having a brisk circulation of air through it. Greenwich Hospital will give a good idea of this disposition, though in respect to loftiness and spaciousness of the apartments it is unequal to what would be requisite for sick people.

I now proceed to offer some remarks concerning those means of advancing the utility of Hospitals, and avoiding their usual

usual inconveniences which depend upon the selection of such patients as from the nature of their cases are the most proper objects for admission.

In judging of diseases with regard to the propriety of their reception into hospitals, the following general circumstances are to be considered.

1. WHETHER they be capable of speedy relief; because as it is the intention of charity to relieve as great a number as possible, a quick change of objects is to be wished; and also because the inbred disease of hospitals will almost inevitably creep in some degree upon one who continues a long time in them, but will rarely attack one whose stay is short.

2. WHETHER they require in a particular manner the superintendance of skilful persons, either on account of their acute and dangerous nature, or any singularity or intricacy attending them, or

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erroneous opinions prevailing among the common people concerning their treatment—It is evident that in general the most important good effects will arise from admitting these.

3. WHETHER they be contagious, or subject in a peculiar degree to corrupt the air and generate pestilential diseases—the danger of their admission to the other patients is obvious.

4. WHETHER a fresh and pure air be peculiarly requisite for their cure, and they be remarkably injured by any vitiation of it—I fear it will be impossible with every improvement to render a hospital a fit residence for persons affected with such diseases.

WE shall apply these considerations to various particular cases, and from weighing the comparative importance of each, shall endeavour to deduce some firm practical conclusions.

THERE

THERE are no disorders in which the benefit of hospitals seems more clearly apparent, than those which arise from external injury in a sound body. They strongly concur in the important circumstances of requiring, and at the same time being capable of speedy assistance. From their violence and the suddenness of their attack they are peculiarly distressing and terrifying, and a poor man's habitation is usually very ill provided with the conveniences necessary for their treatment. Unassisted nature will frequently get the better of other diseases, and they may become less formidable by bearing up boldly against them; but a wound, a fractured or dislocated bone, are disorders immediately felt in their utmost severity, and compel the most reluctant to seek the assistance of art. It is therefore a very humane and proper regulation in every hospital that all such cases should be admitted upon sight without the formality of a recommendation.

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OF accidental injuries, some answer perfectly well the other circumstances favourable to admission, of being little subject either to cause corrupted air or to be affected by it; others on the contrary are liable to great objection on these articles. This difference in general turns upon the degree of inflammation, and consequently of fever, and succeeding suppuration, and mortification, excited; and upon the sensibility and irritability of the parts injured and exposed to the air. Thus, flesh wounds, simple fractures and dislocations, may be cured with almost equal ease in any situation, while violent contusions and burns, wounds of nervous and membraneous parts, compound fractures, and the like, are rendered peculiarly dangerous and difficult of cure by the contaminated air of a hospital. The military and naval Surgeons know from unhappy experience, the fatal effects of bad gun shot wounds in their hospitals. They see the inefficacy of every attempt to save a shattered

tered limb, and are driven with reluctance to the frequent use of that disagreeable, and in these cases, hazardous remedy, amputation. Nor do these mortifications fall to their share alone. Every Surgeon attending a large and crowded hospital, knows the very great difficulty of curing a compound fracture in them. This is so universally acknowledged, that the most humane and judicious of them have been obliged to comply with that dreadful rule of practice, immediate amputation in every compound fracture. Mr. Pott, than whom there is not in the whole profession a more unprejudiced patron of improvement, or a warmer advocate for humanity, has recommended this general rule upon the grounds of accurate and impartial observation. Yet, that it is not founded upon the nature of the case, but upon the added malignancy of hospital air, is evident from the different success in private practice and the country infirmaries. The reader may see this point set in a very striking light

by Mr. Kirkland, in his *Letters on Fractures and Dislocations*, occasioned by Mr. Pott's Remarks on the same subject.

THE danger of bad air in fractures of the skull, is a particular observation of antient date. These have not only the general unfavourable circumstances of compound fractures, but the aggravated evil of a disordered brain and nerves. The fatality of this accident in private practice is melancholy, but to a much greater degree in hospitals.

ALL injuries producing in the first instance a great destruction and mortification of substance, and in consequence an abundant suppuration, are extremely liable both to occasion and to be affected by corrupted air. The separation of sphacelated parts when the powers of nature are vigorous and the surrounding air is fresh and reviving, will generally be affected without communicating a contagion to the subjacent sound parts; but when the solids are relaxed, and the fluids vitiated by steeping in a morbid atmosphere,

atmosphere, the whole body will become in some measure assimilated to the putrefactive ferment in the mortified parts, and will readily imbibe and spread its contagion. The prevalence of laxity and a putrid tendency will also render the suppuration from wounds and ulcers superabundant and ill conditioned; the reabsorption of the matter and its reception into the lungs by effluvia will keep up this disposition, till at length the patient is worn away by a consuming hectic.

ALL these considerations will exactly apply to the wounds made by the surgeon in his operations. How apt the patient is to sink under the symptomatic fever, and abundant suppuration consequent upon them, when breathing the corrupt air of a crowded hospital, I refer to universal experience to testify. This fatal event has been so frequent in military practice, as to furnish a plausible argument for the total abolition of the amputation of limbs. When on the

other hand, the rule before mentioned relative to compound fractures is considered, the poor sufferers under this unhappy accident seem to be given up to inevitable destruction. Preserve the limb—they die of the inflammation and gangrene; take it off—they are wasted by the suppuration and a putrid hectic. A terrible dilemma, if it were unavoidable from the nature of the case. It is certain, that the number sacrificed after surgical operations to hospital pestilence is an evil of important magnitude. This is out of all proportion so much greater in the crowded London Hospitals than in private practice, and country infirmaries, as plainly to show that the single circumstance of purity of the air is of greater consequence than any other to the success of an operation; and that even increased skill and knowledge in the profession will not counterbalance the want of it. This is still more conspicuous in French practice than our own. Every surgeon in France aims at striking
out

out some petty mechanical improvement in the operative part of the art; at the same time it may be safely asserted, that they are usually too inattentive in matters of more fundamental importance to the general utility of the profession. With a mixture of shame and indignation, I have read such passages as the following, in their authors. After proposing some new improvement in a common operation, they relate a case in which it was adopted; and pursuing it in the way of a journal, coolly tell you that on such a day the patient died; but as his death was only caused by the usual consequences of the operation, the credit of their particular method is not at all affected by it. Miserable supineness and delusion! To go on in the daily practice of a fatal operation, satisfied with the self-flattery of having invented an ingenious method of performing it—as if the object of a noble and most useful profession was to please and surprise by a shew of
dexterity,

dexterity, rather than to advance the welfare of mankind.

It is certainly from bad success in hospital practice, that Mr. Sharp and others have given a dreadful idea of so simple an operation as that for the Hydrocele. In private practice and a country infirmary, I have frequently seen it performed without a single dangerous symptom.

WHAT conclusion with regard to the admission of patients into hospitals, are we to deduce from the state of facts thus laid down? plainly this, that since external injuries and the diseases requiring surgical operations in a very particular manner need the relief of hospitals, we are to endeavour by every possible precaution to render these suitable receptacles for them, rather than deny assistance to such afflictions as most forcibly demand it, and are most capable of receiving it.

If the plan for constructing hospitals which has here been briefly pointed out, were

were followed, in all probability the fatal consequences of these cases would not take place, unless the number of patients were inordinately large; a circumstance that, I imagine, will render it impossible with every contrivance to preserve the air quite pure and untainted. To obviate this inconvenience, it might be proper in a very large city to have several small hospitals interspersed through it, solely appropriated to the reception of accidental injuries; which would also have this farther good effect; that assistance would be nearer at hand, and the pain and danger of conveying such patients to a distance would be avoided. This last consideration has, we see, been thought of so much importance in London, that some of the hospitals have on that account been placed in the very heart of the city. It unfortunately happens that these are also some of the largest, and thereby a double cause of bad air is allowed to operate. By much the most hurtful of these is however

ever the largeness and bad construction of the building; for although the air in the middle of a populous city must doubtless be rendered very impure from the vast variety of impregnations it undergoes, yet these impurities are not in general of the putrefactive kind, nay upon the whole may perhaps have the effect of antiseptics, as in some instances has appeared to be the case.

MANY hospitals, however faulty in general construction, are provided with small rooms for the reception of those who have undergone operations; and where the number of patients is small these are usually sufficient to contain all cases of this kind; which is an additional reason why the country hospitals do not feel in so alarming a degree the bad effects of hospital air upon such patients.

THE second and more numerous class of diseases which come under the surgeon's province, is of such as arise from some peculiar virus or cachexy infecting the whole habit of body, and appearing

pearing in a variety of external morbid affections. If we examine these by the general considerations before laid down concerning the admission of patients, we shall find, for the most part, that they possess in an inferior degree the favourable circumstances of being capable of speedy relief and requiring particular attention; and that they are liable in a greater degree to the disadvantage of causing and being injured by vitiated air.

No disease fills our hospitals, especially in some parts of the kingdom, with so many surgical cases as the scrophula, and none is in general more improper for admission. When this virus has once infected the constitution it is continually showing itself in numberless different appearances from the slightest glandular tumour to the most inveterate pulmonary consumption and white swelling of the joints. In all it is constantly manifested by the same sluggish obstinate disposition, resisting almost every attempt of art, either

either from medicine or the hand of the Surgeon.

NOTHING can be more deplorable than the condition of a poor sufferer under this disease in its worst state. I have seen numbers of these miserable creatures, covered over with ulcers, disabled in their limbs, and emaciated by suppurations and pulmonary obstructions, applying for admittance into a hospital, and received merely from the forcible commiseration which their wretchedness excited. The consequence was always uniformly the same. Pent up amidst the morbid effluvia from their own bodies and those of other patients in the same condition, their cough and hectic increased, the discharge from their ulcers became more abundant and ill-conditioned, and they either sunk under their complaints in the hospital, or obtained a short reprieve by returning home to the country air. When the effects of this disease are less terrible, nature will often relieve herself; especially when the

the fibres acquire vigour and firmness by the progress from infancy to puberty. Medical assistance directed to this intention may usefully second the efforts of nature; but the manual and operative part of surgery is in general very little required, and every thing relating to internal medicine or external application may be as well administered out of a hospital as in it. In this disease there seem to be no reasons for admission into a hospital sufficient to counterbalance those against it, except where amputation is necessary on account of a joint swelling, or in a few cases which render some other operation adviseable. Even in these I have frequently seen instances, where the complete cure of a stump or the wound made by opening an abscess, could not be accomplished without dismissal from the house to a purer atmosphere.

It is more difficult to determine on the propriety of admitting persons infected with the venereal virus. Very few,

few, I imagine, in this age are of that rigid severity in principle, as to withhold relief from real afflictions because they are occasioned by the folly and vice of the sufferers. Charity would be solely employed in mitigating the distresses of mankind, without attempting to distinguish the chastising hand of heaven from the ordinary operation of natural laws. I therefore wave all considerations of this sort, and suppose these patients to claim an equal right of admission for relief with any others, under the rules formerly laid down.

THERE is no instance in which the power of the healing art is more distinctly shown than in the treatment of the venereal disease, which, alarming and dreadful as its effects are when left to unassisted nature, will in its most inveterate state admit of a complete cure. It is one of those very few disorders for which medicine affords a specific that is able with certainty to overcome it, by an action not referable to general laws,
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but peculiar to itself. This circumstance in favour of receiving venereal patients into hospitals is reinforced by the great advantage, and in many cases the necessity, of a particular superintendence during the treatment. The administering of mercurials to a considerable quantity requires a close attention and numerous precautions; and when it is considered that the persons most liable to receive this disease are such as are least accustomed to regulate themselves with prudence, it will appear that the confinement and rules of a hospital cannot be more usefully employed than upon them. On the other hand it must be confessed that the nature of the disease itself in many cases, and the operation of mercury, dispose the body to emit putrefactive effluvia which strongly tend to corrupt the surrounding air. This circumstance has occasioned the total rejection of these patients from some hospitals; and where they are admitted, it is a general rule to keep them together in a

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part

part of the house remote from the rest. Where this is exactly followed, and they can be lodged in such a manner that no vitiated air can escape from them to the other patients, no objection can, I think, be made to their admission, and it would be difficult to supply their places with those who would receive more benefit from such institutions. This, however, in a large and crowded hospital is almost impracticable; and in some of the London hospitals the communication of bad air from the venereal wards is very perceptible; so that in a great city where the number of these patients is considerable, it will always be best to appropriate buildings for the reception of them solely. In these, although the contact of fresh external air, so salutary in most diseases, is hurtful to patients undergoing a high mercurial process, yet every contrivance to prevent a putrid atmosphere, consistent with necessary warmth, should be adopted.

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It is a rule in some hospitals to compromise this matter by admitting venereal patients as out-patients only. Where this has been done, I have never known any but the slightest cases treated with advantage; and it were to be wished that no others were undertaken, since the operation of mercury is by much too delicate a thing to be trusted far out of the prescriber's sight, and it may be highly improper for patients under this process to attend at the stated times for advice and medicine. It may be farther added that palliation in this disease is worse to the community than absolute neglect, since the imprudent sufferers deluded by a supposed cure go on to spread the contagion, and entail it in its most dreadful consequences upon a future generation. On this account every empirical nostrum vended for this disease is highly pernicious: for allowing that, properly administered, it be capable of producing a cure, (as in fact is the case with almost every mercurial preparation) yet it is

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absolutely

absolutely impossible by any general directions to render a person, who is unacquainted with the nature of these medicines, a proper judge of their exhibition; and it will always happen either that they injure their constitutions by over-dosing, or that they remain short of a cure; or very probably both these circumstances may take place.

LITTLE needs be said concerning that terrible disease, the cancer. There is so small a probability of curing it by any means hitherto discovered, and it is so loathsome an object to the senses, that unless the removal of the part affected by an operation be practicable and adviseable, it can with no degree of propriety be received into a hospital. If the attention of art be directed to palliate some of the most grievous symptoms, any means for this purpose may be employed with equal advantage by the patient at home.

THOSE habitual ulcers proceeding from that constitutional indisposition called the scorbutic, are usually more dependent upon

upon internal medicine and diet for their effectual cure, than upon topical application and the surgeon's hand. Ulcers of the legs have been thought so far an exception, that a strict observance of rest and a reclined posture, which can scarcely be trusted to without hospital confinement, was imagined the most necessary circumstance in their treatment. Some late observations would seem to overthrow this surgical maxim; and certainly if the cure can as well be accomplished in a different method, it will on several accounts be preferable. It must be confessed that although the ulcers are brought to heal by the common hospital treatment, the cure generally only stands good while the confinement lasts. Then every symptom by which this habit of body is discovered, and every indication of cure, strongly points out the tendency of putrid air to aggravate the original cause of the complaint; and where this prevails in a great degree in a crowded hospital, it is no unusual thing

to find these ulcers rebellious against every means of art, and gradually putting on a more alarming appearance, till it has been necessary to send them away in a worse condition than they entered. If therefore these cases can be treated with tolerable success out of a hospital, it will certainly be better to favour the general health by pure air and suitable diet and medicines, than to incur the danger of such a depravation of the fluids as may injure the constitution, and perhaps aggravate the topical disease. However as this matter may be considered still *sub judice*, and from my own observation I am by no means convinced that absolute rest and a reclined posture are not in many cases necessary, I would not choose to speak positively concerning it.

I PROCEED to consider *internal diseases* with regard to the propriety of their reception into hospitals, which I shall only attempt to do in such a brief and general manner as may serve to direct
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the judgment of persons, not belonging to the medical faculty, in the benevolent employment of selecting proper objects for these charities.

THE division of diseases into *acute* and *chronic*, though not sufficiently accurate and comprehensive for the purposes of science, is the most useful in our view of the subject, since it turns in general upon those properties of diseases, which determine the circumstances formerly pointed out as the great objects of consideration in admitting or rejecting them. Though it is difficult precisely to distinguish these classes, on account of the gradation by which they fall into each others limits, yet it is easily understood that the *acute* are those which are violent in their attack and rapid in their course, soon terminating in death or recovery, and which proceed rather from occasional and accidental causes than a regular determination of the constitution—that the *chronic* are the contrary of all this; slow in their progress, incomplete in
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their terminations, and frequent in their returns, as proceeding from causes constantly existing in the system. This slight sketch of their character will at once show, that the acute have many advantages over the chronic in their plea for admission into hospitals. The causes from which they proceed being accidental, and their progress hazardous and rapid, they at the same time are likely to receive speedy relief from the skill and attention of the physician, and particularly stand in need of his superintendence. The chronic, on the other hand, give little hopes of a radical cure, and must usually be treated by such remedies as do not produce a sudden change, and consequently do not require a frequent attention to their effects.

FEVER either as a symptom or an original complaint, is the principal object in acute diseases. There are almost infinite diversities in the state of this disorder; in all its varieties the reasons for admitting

admitting it to the relief of a hospital are very strong; the reasons against its admission vary in degree greatly.

EVERY fever, it is true, is liable to contract a malignancy from the bad air of a hospital, which also becomes communicable; but in many of them, such as the intermitting fever or ague, the inflammatory continued fever, the pleuritic, nephritic, rheumatic, and all of the like nature, this disposition is in so inferior a degree, that, unless the hospital be in so wretched a state as to deserve the name of a Pest-house rather than an Infirmary, there need be no scruple in admitting them. As was before observed concerning compound fractures and other accidental injuries, the necessity of affording relief to such disorders is so striking, that these institutions do not at all answer their end unless they are rendered suitable for them; and this may be considered as the test of their utility. Many more doubts may be raised respecting

pecting those fevers which are peculiarly termed *contagious*.

CONTAGION is distinguishable into two kinds, and it is of importance to our subject to make this distinction. The contagion of some diseases, such as the small-pox and measles, is of a specific nature, always producing its own disease, infecting by the smallest conceivable particles of its matter, and giving no indication of itself by a sensible vitiation of the surrounding air, except when accumulated in large quantity. The contagion from putrid and malignant diseases, on the other hand, is very similar in all cases; is communicated in proportion to its quantity, which is perceptible by sensible effects on the air; and is nearly, if not entirely of the same nature with that corruption of the air always proceeding from the putrid effluvia of a number of persons crowded into a small space. This may therefore be so diluted and counteracted by various precautions, as, in great measure, to lose

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its infectious quality; the former never can; hence a necessary and invariable rule of excluding it from a general hospital. But it so happens that of all the diseases which prevail in this country, and indeed in the greatest part of Europe, a specifically contagious one, the small-pox, is the most frequent, and carries off the greatest number of people. It would therefore be a great check upon the utility of hospitals, if so fatal and common a distemper could meet with no relief from them; especially as in its dangerous state it requires in a very particular manner the close attention of medical skill; and from some late improvements in practice, there is reason to believe that many lives might be saved which are daily sacrificed to ancient errors in the method of treatment.

A VERY happy peculiarity also attends this disease, that by a certain method of communicating it, its violence is lessened in so great a degree as to render it almost a different distemper, in which a
fatal

fatal event is absolutely rare and uncommon. There is not in the whole annals of the healing art any discovery nearly so beneficial to mankind (excepting perhaps the use of mercury for the venereal disease) as this practice of inoculation; it is therefore highly interesting to the wishes of humanity that it should prevail as generally as possible. On these accounts particular hospitals have been for some time past erected in the Metropolis for the small-pox, both in the natural and artificial way of receiving it, and their public utility has been so great, that it is pity they are hitherto confined to London. The frequency of this disease would always give a supply of patients in most of our large towns, in the natural way; and if, what is a most desirable object, the practice of inoculation was to become general, and all children at a certain age were to undergo it, there never could be wanting a constant and regular succession of subjects. So flattering a prospect of public good, moves

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me most warmly and heartily to propose this addition to the charitable institutions in all the cities and towns where a general hospital is already, or may in future, be founded. A moderate sized building, either distinct, or forming a wing to the general infirmary, would serve this purpose. It should be constructed with every possible contrivance for pure air, which is so remarkably salutary in this disease; and might serve indifferently for the reception of the natural or inoculated small pox, though it would be proper to separate them into different rooms.

I WOULD wish the benevolent patrons of these charities to reflect, that, till this scheme is executed, a large proportion of the diseased poor must be unprovided with suitable relief, and a most dangerous distemper will be continually making its ravages unchecked by those improvements in practice which have been made so much to the benefit of mankind.

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WITH respect to those diseases which are contagious on account of the degree of putrefactive malignance attending them, the danger from them is to be estimated in the same manner as that from the usual causes of putrid air. If the construction of the hospital be such as fully to guard against the generation and communication of corrupted air, it may be safe and proper to admit patients in these distempers, which universally demand great medical care and attention; but it will certainly be wrong for their sakes to expose a number of other patients to any considerable hazard of a dreadful disease. Besides, since one of the very worst of these diseases takes its rise from crowded hospitals, it cannot be imagined that a place where even the least degree of the same cause prevails can be a proper receptacle for them; for this reason, as most of our hospitals are at present circumstanced, they ought as much as possible to avoid admitting them. The fatal necessity of receiving malignant

malignant fevers, into the military hospitals has been too often experienced, but no such necessity takes place in common practice. It must be left to the judgment of the hospital physician, to balance the positive and negative reasons, and to determine as he thinks will conduce most to the public good.

ALL diseases affecting the lungs, are, I fear, of that kind which can never receive benefit from even the sweetest and best contrived hospital. The direct application of the air to the affected part renders its purity a matter of the highest consequence; and indeed it is not enough that it be merely innoxious, it ought to be medicinally soft and pure, since it is frequently the only remedy in which we can put any confidence. Exclusive of any peculiar contamination of hospital air, the circumstance of their being situated in large towns is a sufficient objection to their receiving these diseases.

WITH respect to chronic disorders, it will be needless to go through an enumeration

enumeration of them for the purpose of determining the propriety of their admission into hospitals. The general considerations formerly laid down must determine in each particular case, always remembering that admitting a patient cannot be a thing indifferent, but both on his own account and that of the other patients, if no peculiar advantage is expected from his being taken into the house, he should remain out. Instead of studying to fill a hospital, we ought to consider how it may be emptied, since every improper object admitted is a burthen upon the whole house; and every vacancy, a general relief. I would wish to enforce as much as possible the idea of a hospital being a place designed for the *cure of the sick*, and not an *alms house* for the support of the indigent and decrepid. I have very frequently known this matter become the subject of dispute, and humane persons swayed by the latter consideration to recommend improper objects for hospital relief. Yet
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nothing is more evident than that the same institution cannot be calculated for both intentions, and that it is an injury to burthen an infirmary, which is supported by the private charity of individuals, with such objects of relief as are provided for by the public. It is not poverty, but sickness, that demands the assistance of a hospital, and when diet and lodging are joined to medical relief, it is only that the end of curing a disease may be better accomplished. On this account, though the number of in-patients should be restricted within confined limits, the out-patient list should be upon the most comprehensive plan possible; and I would wish it to be understood that wherever I have spoken of the impropriety of admitting patients into a hospital, I meant to leave it entirely free and open to them for relief as out-patients. I believe this object is in general too much neglected. Where it is kept up with proper spirit and attention, and a habit of regularity in attend-

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ance and obedience to orders is formed among the patients, very great and extensive good may be done by dispensing advice and medicines to the poor in such cases as do not require admission into a hospital. There is usually great neglect and mismanagement in the treatment of those poor sick who are paid for by a parish. The Apothecary who contracts for them at a fixed annual stipend, will be tempted to consider it as a job which he is to do in the cheapest manner possible; and to afford them only such attendance and medicine as is just necessary to preserve himself in office. Indeed the shamefully scanty pittance by which he is recompensed may generally be pleaded in his excuse. There is no temptation to use the out-patients of a hospital in this manner; and the expence of medicines is so trifling in proportion to that of the various incidents in house-keeping, that there need be very little apprehension of wanting a fund to extend this branch of charity to all who offer.

I HAVE

I HAVE taken occasion in several instances to censure that spirit of penurious æconomy which makes charity to appear so unlike itself, and often defeats its benevolent intentions. A reflection of this kind occurs to me, which I cannot more properly introduce than in this place. It is the custom in many hospitals to require a cautionary sum to be deposited on admission, with the design of securing the charity from any expence for the patient's funeral, in case of death. In the latest book of hospital rules which I have seen, that compiled for the Leicester Infirmary, it is calculated that the sum of twelve shillings is sufficient for this purpose, which is accordingly demanded on the admission of each patient. Now this sum, though apparently so trifling, is such as would distress many poor families to raise; and this difficulty would, in a much greater degree than can readily be imagined, check the utility of hospitals to that class of persons who most stand in need of them.

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The natural propensity that mankind in general has to pay the last duties to a relation, and the horror of such violations of the dead as are always suspected in hospitals, will incite all but the most wretched to take this charge upon themselves. Such a rule is therefore calculated to guard against those only whose misery most strongly solicits relief; and in proportion as the fatality of a disease rendered medical assistance necessary, they would find a greater difficulty in procuring a friend to deposite the sum required. In the Manchester Infirmary, where no such demand is made, the expences for funerals, which is calculated at thirteen or fourteen shillings each, has for ten years past amounted to no more than eight shillings per ann. Had it been ten times greater it would have been a pitiful object to stand in competition with the rights of humanity.

HAVING already treated of appropriating hospitals to some particular diseases,
I shall

I shall now pursue this subject with regard to another case or two.

THERE are no instances in which humanity appears so amiable as in its relief of the distresses to which the weaker and softer sex are peculiarly liable. Nature has given them a particular claim to our tender protection, and it is a distinguishing mark of civilized manners that they add force to this natural principle: thus, nothing more strongly stamps the character of *Gentleman* than a quick sensibility and delicate attention to this point.

THE state of pregnancy and parturition most especially calls forth this regard to the sex, and no age or nation has ever been so barbarous as to be entirely insensible of it. It was therefore an extremely natural and amiable turn of the charitable spirit so prevalent in this age, to institute hospitals for the reception of poor lying-in women; and the scheme has been accordingly honoured by the patronage of persons of the highest rank and character. I should on every ac-

count be unwilling to express any disapprobation of a species of charity apparently so very laudable, did not a real concern for the welfare of its objects overbalance other considerations. Influenced by this motive I know no fear of public disfavour, and shall with freedom give my sentiments on the subject.

THE chief source of error in the treatment of puerperal women has been considering the state of parturition too much a disease, rather than a regular operation of nature. From hence has proceeded that numerous train of arbitrary rules and customs relating to diet, confinement, and nursing, which are applied indiscriminately to all persons without regard to their particular state or constitution. It is a fact for which I refer to all intelligent practitioners in midwifery, that fatal consequences after delivery, happen much more frequently in that class of women who are enabled to comply with all the forms and precautions of the most delicate practice, than among those

those who are in want of every convenience, and many things usually thought necessary in their condition; and are forced from every indulgence of rest and retirement. Hence arises a convincing argument that there is something fundamentally wrong in the common method of treatment, and that the so much dreaded diseases of child-bed are rather artificial than natural. On this subject a great deal remains to be said, and it is with pleasure that I can refer to a treatise concerning puerperal fevers, and the management of women during this period, which will speedily be published by a gentleman fully qualified from extensive experience and an enlarged freedom of thinking, to make the most useful improvements in this part of practice. My intimacy with him allows me to borrow a few observations which are applicable to the present purpose.

THE state of parturition not being a disease, but a regular process of nature,

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appears

appears at first sight not to be a fit subject for a hospital, which is properly a receptacle for the sick. Manual assistance in delivery is very rarely requisite; and when it is, may easily be had by the poorest person from the very numerous practitioners in this branch. Medicines and medical superintendence are also in common cases totally unnecessary. Nursing, confinement, and unaccustomed diet, are much oftener carried to a pernicious excess, than deficient in a hurtful degree to the very lowest class of women. Nature rather chooses to be confined within mere necessities, than burthened with superfluities, and though these may seem to contribute to the ease and comfort of patients, they scarcely will to their safety. These remarks may serve to show that the puerperal state does not strongly require the assistance of hospitals; let us next examine whether these receptacles are not peculiarly improper and dangerous to women in this condition.

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THOUGH this state is not, as I before observed, of itself a disease, yet it is a violent effort of the system, which renders it particularly liable to disarrangement from accidental causes. The puerperal fever is well known, and justly dreaded; and various are the causes to which it has been attributed. I think myself sufficiently warranted by the authority before cited to consider it in general as the artificial product of close vitiated air, too great warmth, and heating medicines and diet. As it is manifestly a fever of the putrid tendency, there can be no doubt that every thing disposing to putrefaction must first act as an occasional cause, and during its progress as an aggravating circumstance conducing to a fatal termination. Hospital pestilence in the slightest degree must therefore be peculiarly dangerous to lying-in women; and I wish it did not appear too plainly from fact, that these institutions as they are at present conducted, do not answer the benevolent designs with which they

they were erected, but rather give diseases where there were none before, than prevent or cure them. Within these two or three years puerperal fevers have been uncommonly frequent and fatal in London, and have proved extremely distressing to practitioners, who have been as much at a loss for the general cause, as the remedy. Whatever this was, I have been assured from the best authority that they have proportionally raged much more in the lying-in hospitals, than in private practice; which is a strong argument both of their putrescent nature, and of the tendency of these hospitals to produce them. (a)

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(a) A REMARKABLE fact of this kind appears in the account of an epidemic disease among the lying-in women at Paris, in the year 1746, given in the Memoirs of the Academy of Sciences; where, after observing in general that the disease was more fatal to the women delivered at the Hotel Dieu, than to those delivered at their own houses, it is remarked that out of twenty of these patients at the Hotel Dieu, scarcely one recovered. A fatality equal to that of the most malignant fever ever known!

ON making a calculation from the printed account in the year 1769, of the *British lying-in hospital* (which is conducted by persons eminent for their skill, and extremely attentive to every circumstance that can influence the health of their patients) I find the average proportion of deaths from the first institution has been very nearly one in fifty one. This mortality can never be supposed the natural consequence of child bearing; and from many observations in my own practice, and that of others, I am certain that private practice is usually much more successful. The publishers of that account seem aware that the number of deaths is alarming, and in some measure endeavour to apologize for it, by saying, that most of those who died were afflicted with dangerous distempers at their admission; but I do not see that a larger allowance of such cases ought to be made for hospital patients than for an equal number of other poor; and it is to be considered

considered that the private practitioner who is never called to the poor but in cases of difficulty and danger, has a great disadvantage in this respect, which hospitals that receive patients indiscriminately, are exempt from.

I SHOULD be extremely unwilling to check the progress of any charitable institution, which in the main appears calculated to promote the public good; I therefore beg it may be understood, that my remarks on lying-in hospitals are chiefly calculated for those now in being, not such as may hereafter be erected upon an improved plan. These I doubt not might be rendered a great comfort to the poor, without giving rise to any peculiar danger as hospitals; and if nature has in general so amply provided for the *safety* of women in this condition, as to render hospitals unnecessary with regard to their usual purpose of *curing a disease*, still they may be very
useful

useful and laudable institutions, considered in the light of *common charity*.

THERE is another benevolent design now carried on in London for the delivery of poor women at their own houses; in which the attendance of a skilful practitioner, intrusted with a power of distributing supplies as he finds requisite, must be productive of the kindest and happiest effects, and cannot be liable to a single objection, if faithfully and judiciously managed. Such a design merits the warmest encouragement, and I heartily wish it success.

THE last disease to which particular hospitals have been appropriated, that I shall mention, is Lunacy.

THE case of the unhappy objects afflicted with this disorder is in a peculiar manner distressful, since besides their own sufferings, they are rendered a nuisance and terror to others; and are not only themselves lost to society, but take up the whole time and attention of
others.

others. By placing a number of them in a common receptacle, they may be taken care of by a much smaller number of attendants; at the same time they are removed from the public eye to which they were multiplied objects of alarm, and the mischiefs they are liable to do to themselves and others, are with much greater certainty prevented. It is a melancholy circumstance of this disease that it very seldom admits of a perfect cure; so that there is a probability of its requiring almost during life the care and superintendence of skilful persons. As its seat appears to be rather in the mind than the body, the attention of art must be chiefly directed to acquire a proper government over the temper and passions, by means of contrary affections of the mind; a task which necessarily supposes constant observation and great experience in these particular cases, together with that firmness and total absence

absence of terror which can only be gained by habit.

FROM all these considerations it has long been the custom to confine these patients in houses appropriated for their reception, and provided with persons experienced in their management. Institutions of this kind, undertaken by private persons for their own emolument, are sufficiently numerous; but the poor in this kingdom have hitherto been but indifferently provided with public hospitals for the relief of Lunatics. Besides the two in London, there is not throughout the kingdom one that deserves the name of a Lunatic hospital, except a lately erected one at Manchester. From an account of this last lately published, I shall quote some considerations which induced the promoters of charity in that place to set on foot so benevolent a design.

“ In the first place, they apprehend-
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" ed that no cases could be more truly
 " deplorable than those of *poor Lunatics*, who had, in common, no prospect of a cure, and who had besides no care or attendance upon their persons, but what a needy parent could bestow, or what a thrifty parish officer would provide; at the same time that they continued public spectacles of the deepest misery, if not of terror, to their neighbours.

" SECONDLY, the great prospect which the trustees might fairly entertain of frequently relieving these poor wretches, if not perfecting their cure; by duly confining them, supplying them with all necessaries, and placing them under the care of skilful physicians; the physicians of the infirmary, (and the surgeons, when necessary,) having generously offered to give their attendance gratis.

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" THE last, but not least consideration, was the assistance which they might reasonably hope to give to many persons of middling fortunes, who labouring under the terrible misfortune of an unsound mind, had no place to resort to but a *private Mad-house*; where their cure stood a great chance of being protracted for the benefit of the mercenary keeper, if ever to be accomplished by one who could lay so small a claim to medical abilities. These persons, or their relations, they could not doubt would gladly give the preference to an *asylum* of this kind, managed by men of principles and honour, where the patients might expect to meet with the most humane and disinterested treatment; and where, though a moderate fee was taken by the trustees for their subsistence, and by the physician for his advice, they might happily be restored to their

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" health

“health and friends, without impairing
“their fortunes.”

THE humanity and importance of these motives are indisputable; and I do not perceive a single objection that can be raised against such institutions. The great success which has attended this at Manchester, may be seen from their reports; and I can give a testimony of the convenience and benefit that a large surrounding country has found from it. It were therefore to be wished that others of our principal country towns would follow so laudable an example. I should hope that one hospital in a district of several adjacent counties, would be sufficient to receive all the patients who might offer; and instead of being a burthen, they would be a saving to the community, not only from the relief of private families, but that of parishes which might have paupers afflicted with lunacy.

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IT is unnecessary to point out any particular objects of attention in the planning and conducting these hospitals; since the case can admit of little doubt or variation, and from the designs already completed, it seems sufficiently understood. The absolute necessity of a separate room or cell for every patient is very apparent; and it would seem needless to inculcate on the humane, the very great impropriety and cruelty of allowing the poor unhappy sufferers to become spectacles for the brutal curiosity of the populace.

I SHALL conclude with some reflections on the utility of hospitals, as they promote the benefit of the healing art, both by affording advantages for education, and giving opportunities of experimental practice.

MEDICINE and surgery are sciences

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which cannot be learned by theory alone; an attentive observation of the real appearance of diseases, and the action of the means used for their relief, is absolutely necessary to form a practitioner in these most useful professions. The youth who begins his education for physic in an apothecary's shop, will have opportunities of seeing the practice, but totally unaccompanied with the theory; hence his knowledge in that state will be purely empirical. On the other hand, he who goes through the regular approaches of a scientific education, will begin his medical studies entirely ignorant of practice, and will have no opportunity of being acquainted with it, except by means of a hospital. It is therefore of the utmost importance to him that attendance upon a hospital should form a principal part of his course, otherwise he may take his degree without a single just idea of what he is to meet

meet with in the practice of his profession, and will be distressed and embarrassed by the most simple cases. For this reason no school of medicine can flourish, without possessing the advantage of being situated where a large hospital will at all times furnish a sufficient number of patients for lessons of real practice to the students. There is no circumstance which has raised the fame of Edinburgh as a medical seminary, so greatly as the excellent method in which this part of the course is conducted. A number of such cases as are most likely to prove instructive, are selected and disposed in separate rooms in the infirmary, and attended by one of the college professors. The students go round with him every day, and mark down the state of each patient and the medicines prescribed. At certain times, lectures are read upon these cases, in which all the progressive changes in the disease are traced and explained,

plained, and the method of practice is accounted for; with a reference to the history of the disease in general. When a student is so far advanced in the introductory parts of the science as to be fit for receiving instruction of this kind, it is impossible to conceive any thing better calculated for his improvement.

SURGICAL education is, in general, a sort of medium between the empirical and scientific method of acquiring knowledge. As the theory of this branch is more certain and less complicated than that of medicine, it may be tolerably learned under an intelligent master without the formal gradation of an university course. Anatomy and Physiology are the foundations of surgical theory, and will in general serve to explain its practice; where therefore there is an opportunity of acquiring a competent knowledge of these, a young person's education may go on regularly and usefully in the common

mon method of apprenticeship, and at the end of it he may be equally advanced in the theoretical and practical part. But the variety of cases which require the surgeon's assistance is so great, and some of them are so uncommon, that the private practice of even the most eminent in the profession, will scarcely in the course of a few years afford suitable examples of all that is necessary to be learned; and attendance on a hospital where there is a constant succession of numerous surgical cases, and where the youth may have access to see and assist in every thing that happens, gives an advantage which cannot be had in an equal degree any other way, and is almost indispensable in his education.

If then the importance of providing means for bringing up a regular succession of well educated practitioners in the several branches of the healing art, be considered, the institution of hospitals

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will in this view appear very strongly to promote the public good.

Nor only the continuance, but the improvement of medical knowledge, is greatly indebted to hospitals for the opportunities they afford of *experimental practice*. I am aware that the very name of *experiment* occasions great outcries and prejudices among the vulgar; and that it is apt to startle some well-disposed persons of a superior class; but as this appears to be owing to wrong ideas hastily taken up concerning the meaning of the term, I do not doubt by a little explanation to render it evident, that such a mode of practice, in the manner in which it ought to be, and really is conducted, is not only defensible, but in the highest degree laudable.

THE healing art has its original foundation in *experiment*. Accident at first made known the virtues of a remedy in some particular disease. Upon the proper

per attestation of this accidental success, men were induced to try its efficacy in the next case of the same kind that offered. After repeated *experiments* of this sort, they went farther, and from analogical reasoning ventured to apply the remedy not only in the same disease, but others which either from their cause or symptoms appeared similar. Analogy led them next to vary the remedy, and other substances resembling it in sensible qualities were tried, upon the supposition of their possessing similar virtues. Thus from a series of *experiments*, a settled mode of practice was at length instituted; and in medicine, as well as in other sciences, men began too soon to refer to the authority of others, instead of continuing the progress towards improvement. Yet while diseases continue obstinate and fatal, and the medical art is so far short of perfection, it is evident that there can be no reason for censuring any attempts

tempts to improve it by the same method as it began.

THE great advances which have within a century past been made in all the concomitant branches of medical knowledge, that of the structure of the human body, the nature of diseases, and the general qualities of medicines, must certainly render experimental practice much safer than formerly. How ignorant soever we may be in many cases of what is useful, we are always able to judge very speedily of what is likely to prove hurtful. The faculty will readily confess that they are often obliged to lament the limited benefit of their art, and the fatality of many diseases unconquerable by any means hitherto discovered; but they deserve the justice of having it also acknowledged, that they are neither so rash, obstinate, or ignorant, as not to avoid doing mischief where they can do no good. I refer to every
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authenticated account of the trial of new medicines or methods of cure, for the very great caution with which it is made. The best attestations of their safety, and the clearest analogical reasoning of their probable utility, are generally required; and when any peculiar hazard has seemed to attend their exhibition, we have seen the faculty in several instances, with the most public-spirited boldness make repeated experiments upon themselves, before they ventured to try them upon the meanest of their fellow creatures. I think we may challenge any set of men to show more clear and unequivocal proofs of zeal for the public good.

HOSPITAL patients are on several accounts the most proper subjects of an experimental course. The constant superintendence of persons skilled in the management of the sick, and accustomed to obey orders, and the confinement
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to strict regulations of diet and regimen, are advantages not to be had in an equal degree in private practice, either among the poor or the rich. A number of such cases as from their obstinacy and fatality require some uncommon attempts for their cure, is easily collected in hospitals; and opportunity is thereby given for all those gradual steps, and minute variations, which contribute to render an experiment both safe and decisive. The tenderness of a practitioner's reputation, when concerned for a person within the eye of the public, and exposed in every step to the notice of prying and conceited by-standers, is too apt to render his practice timid and narrow; he will be contented with going on in the beaten track, and will be satisfied if he comes off with the credit of having neglected nothing that is usually done according to the common forms. In a hospital he is free from this restraint, and

and may exert his genius in any new thought for the benefit of his patient, though unsupported by precedent. Yet he can have no motive to persist in an unsuccessful trial, since it is plain that it cannot answer his end of improving the art. In fact, most of the modern improvements in medicine and surgery, have taken their rise from hospital practice; consequently these patients have reaped the first benefits from them; and thereby numbers of the poor have met with relief in deplorable cases, which without the benefit of these institutions, and the spirit of rational experiment, would in all probability have brought them to a miserable end.

It is mortifying to think that all these advantages are in general so ill understood by those for whom they are designed; and it is a striking instance of unreasonable prejudice, joined to weak credulity,

credulity, that the very people who would not on any account enter a hospital, though attended by men of the most approved skill and humanity, will without hesitation commit themselves to the care of an itinerant quack, whose whole practice is nothing but random guesses, and presumptuous rashness.

T H E E N D.

*** DR. PERCIVAL of Manchester, to whom, with others of my friends, I am greatly obliged for the revision and correction of these papers, has favoured me with the following Letter, which forms a very valuable addition to my little piece. It is with great satisfaction that I offer it to the public, and join so respectable a name to my own, in a manner so flattering to me.*

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L E T T E R
F R O M
T H O M A S P E R C I V A L,
M. D. F. R. S.

To MR. AIKIN.

Manchester, October 1, 1771.

DEAR SIR,

I HAVE perused with great pleasure your ingenious THOUGHTS ON HOSPITALS. The importance of the subject, and the judicious manner in which you have treated it, cannot fail to excite the attention, and to secure to you the approbation of the public. It is a melancholy consideration, that these charitable institutions, which are intended for the health and preservation of mankind, may too often be ranked amongst
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the causes of sickness and mortality. (a) This observation you have well illustrated, by pointing out the pernicious effects of tainted air; the false economy of crowding a number of sick persons into as little space as possible; and the mistaken humanity of admitting patients, who labour under diseases which are contagious in their nature, incapable of relief, or liable to be aggravated by confinement in an impure atmosphere.

BUT as so many infirmaries are erected in different parts of the kingdom,
on

(a) A THIRD of all who die at Paris, die in hospitals. In the *Hôtel Dieu*, a great hospital situated in the middle of that city, we behold a horrid scene of misery; for the beds being too few for the numbers admitted, it is common to see four, six, or even eight patients in a bed together, lying four at one end, and four at the other. Above a fifth of all who are received into this hospital die; the annual numbers admitted, amounting to near twenty two thousand. *Vid.* Police of France, p. 83. In the two great hospitals of London, St. Thomas's and St. Bartholemew's, about six hundred die annually, or one in thirteen of all admitted as in-patients. *Vid.* Price on the Expectation of Lives, p. 216. In the North.

on plans which cannot now be altered, and as they are governed by established laws which, however erroneous, will still, from the force of custom, continue to be observed, it were to be wished, that some means could be devised of obviating the inconveniences which arise from their present construction, as well as mode of regulation. Permit me to suggest to you, a few hints on this subject, which I shall hope to see improved and enlarged, if they fall within the design of your useful publication.

F 2

AIR,

Northampton infirmary one in nineteen of the in-patients (*communibus annis*) die every year; and in that of Manchester, which is built in an airy situation, and tolerably well ventilated, one in twenty two. This proportion of deaths, I apprehend, exceeds the mortality which occurs in private practice: And it will appear to be more considerable, when we recollect that, besides the patients who are dismissed as incurable, improper objects, or on account of irregularity, the event of whose cases remains unknown, the small pox, measles, lues venerea, fevers, and other dangerous and fatal distempers, are excluded from admission into these hospitals.

AIR, DIET and MEDICINE, are the three great agents to be employed, in preventing and correcting putrefaction and contagion in hospitals. A gallon of air is consumed every minute by a man in health; a sick person requires a larger supply, because he more quickly contaminates it; and it is observed that animals expire sooner in foul air, than in vacuo. Besides ventilators therefore, and sashes sliding downwards so as to open at top, apertures should be made in the wall opposite to the windows, corresponding to them in number, and of sufficient dimensions. This is an improvement lately adopted in the infirmary at Leicester, and has been found to succeed. The larger wards should have a fire-place at each end of them; and if the fly of a smoke jack were to be fixed in every chimney, it would accelerate the current of air through them. In summer time, this discharge of foul air by the pipes of the chimney, may be continued by means of a flue, communicating

nicating with a fire below. I should not omit to mention, that the salubrity of the air is very much influenced by its temperature, which ought to be regulated by a thermometer, placed in the centre of every room.

BUT supplies of the purest air are insufficient to destroy contagion; of which I could produce several undeniable proofs, from the best authority. It is necessary therefore to correct the noxious effluvia which arise from so many distempered bodies, afflicted perhaps with mortifications, carious bones, malignant ulcers, or putrid fevers. This I apprehend may be effected by sprinkling, or rather washing daily the apartments of the sick with vinegar and tar water, or with vinegar and an infusion of dale saw dust; by frequently fumigating them with the steams of boiling vinegar and tar; or if diseases of extraordinary malignancy occur, with boiling vinegar, myrrh, and camphor; by using wood

fuel, particularly fir, and occasionally dipping the faggots in tar; by ventilating the bed cloaths of such patients as are able to sit up or walk about, and afterwards impregnating them with the antiseptic vapours above mentioned; and by obliging the sick to conform strictly to the rules of nicety and cleanliness. If any of them have been accustomed to smoking, they should be allowed pipes and tobacco, when such an indulgence will not be injurious to them. The patients should have their linen very frequently renewed, and their shirts and sheets should be fumigated with frankincense, before they are used. The dressings of foul ulcers, &c. as soon as they are removed, should be thrown into vessels of vinegar, and carried out of the wards with all convenient expedition. It is to be wished that salves were banished from hospital practice; and I rejoice that, in a former work, you have so strongly expressed your disapprobation

approbation of them. (a) Oil by heat acquires a rancidity which renders it both stimulant and septic, and by these qualities it increases the acrimony and fœtor of all purulent discharges. Poul-tices either of carrots or white bread, or tow lightly spread over with the mucilage of starch, mixed with such a proportion of neats foot oil as to prevent its growing stiff, might perhaps be usefully substituted, as soft defensatives in the room of plasters and cerates. Twelve parts of the mucilage, and one of oil mix uniformly together without heat, are of a due consistence, and continue moist a sufficient length of time. In some cases it may be of advantage, to prepare the mucilage of starch with the saturnine water of Goulard; which with the neats foot oil, will furnish an emollient, antiseptic, and moderately astringent topic,

F 4 much

(a) Observations on the External Use of Preparations of Lead.

much superior, I apprehend, to the *unguentum tripharmacum*.

NEXT to the salubrity of the AIR, a well regulated DIET may be considered as the most powerful preservative against the in-bred diseases of hospitals. In summer and autumn, when putrid distempers are most prevalent, the patients should be liberally supplied with fruit. Nor will the procuring of it be attended either with difficulty or expence, if it be intimated to the patrons of these charities, and to other well disposed persons, that such donations will be highly acceptable.

RICE forms a considerable article in the table of diet, of almost every infirmary. But as a wholesome aliment it is much inferior to salep, which I believe is seldom if ever used. I digested several mixtures, prepared of mutton and water, beat up with bread, sea biscuit, salep,

lep, rice-flour, sago powder, potato, old cheese, &c. in an heat equal to that of the human body. In forty eight hours they had all acquired a vinous smell, and were in brisk fermentation, except the mixture with rice, which did not emit many air bubbles, and was but little changed. The third day some of the mixtures were sweet, and continued to ferment; others had lost their intestine motion and were sour; but the one which contained the rice was become putrid. From this experiment it appears that rice, as an aliment, is slow of fermentation, and a very weak corrector of putrefaction: It is therefore an improper diet for hospital patients. Nor can it be considered as a very nutritive kind of food, on account of its difficult solubility in the stomach. Experience confirms the truth of this conclusion; for it is observed by the planters in the the West Indies, that the negroes grow thin,

thin, and are less able to work, whilst they subsist upon rice.

SALEP is said to contain the greatest quantity of vegetable nourishment under the smallest bulk; and from its restorative, mucilaginous, and demulcent qualities, it deserves to be considered as a *medicinal diet*. It obtunds the acrimony of the fluids, and at the same time is easily assimilated into a mild and wholesome chyle. In diarrhoeas, and in the dysentery, it is highly serviceable, by sheathing the internal coat of the intestines, by abating irritation, and gently correcting putrefaction. In the symptomatic fever, which arises from the absorption of pus, from ulcers in the lungs, from wounds, or from amputation, salep used plentifully, is an admirable demulcent. (a)

CHEESE,

(a) Vid. Percival's Observations on the Orchis Root, Georgical Essays, Vol. 4.

CHEESE, I apprehend, is an unwholesome diet for convalescents, because when new it is almost indigestible; and although when mellowed by age, I have observed that it ferments readily with flesh and water, yet it separates a rancid oil, which seems incapable of any further change, and as a septic must be pernicious. For hospital patients are so liable to relapses, that the slightest error of diet may occasion them. The infusion of malt, which is strongly recommended in the scurvy at sea, may perhaps, as an antiseptic, be no less useful in hospitals. It may be allowed the patients for common drink, in lieu of table beer, which having undergone the vinous fermentation, has lost in some measure the power of correcting or sweetening putrefaction. Should this liquor prove too aperient, a few red rose leaves, or balauftines, infused with the malt, will obviate this effect, without communicating any disagreeable flavour. The flour

flour of malt might also be employed for making gruel, milk pottage, or puddings.

WITH respect to animal food, all salted and smoke dried meats are, I believe, generally disallowed. Pork should likewise be forbidden, as it is the most putrescent kind of flesh, and tends to diminish perspiration. Care should be taken also, that the meat which is killed for the use of infirmaries, be more than usually blooded, that it may not by becoming soon tainted, concur with other unavoidable causes, in the production of putrid diseases.

CONCERNING MEDICINES little more can be suggested, than that in prescribing them, regard should be had not only to the present symptoms, but also to the putrid tendency, and contagious nature of hospital diseases. And as the course of infection is usually slow, the physician should carefully watch its first accession,

sion, and by suitable remedies instantly check its progress.—In malignant fevers, besides administering the peruvian bark in substance or decoction, a light infusion of it, well acidulated, may be directed for the common drink of the patient. But in less urgent cases, vinegar, or cream of tartar whey will be a more grateful diluent, and sufficiently antiseptic. It would be a farther means of correcting putrefaction, and would answer other useful purposes, if the sick were to wash their faces, and bathe their feet and hands every morning and evening, in a decoction of bark, or of chamomile flowers, mixed with vinegar.

I HAVE thus, my dear friend, very imperfectly drawn the outlines of a plan for rendering hospitals upon their present establishment, more salutary to the sick, and consequently more useful to the public; and I flatter myself you will improve and finish it. Permit me, before

fore I conclude, to mention an ingenious contrivance, used in the infirmary at Leicester, which contributes greatly to the ease and convenience of the patients. The bedsteads, which are of iron painted, are so made, that the backs, by means of a screw, may be raised or lowered, with the greatest facility. This improvement was suggested by Dr. Vaughan, and executed under the direction of Dr. Ash at Birmingham.

I am with sincere Esteem and Friendship,

DEAR SIR,

Your faithful, affectionate,

and most obedient Servant,

THOMAS PERCIVAL.

E R R A T A.

- P. 14. l. 3. for *ranging* read *ranged*.
- P. 15. l. 21. for *putrescency* read *putrescency*.
- P. 18. l. 10. for *raving* read *ravings*.
- P. 56. l. 15. for *expences* read *expence*.
- P. 58. l. 11. after *much* read *as*.

