

The village-pastor's surgical and medical guide, in letters from an old physician to a young clergyman, his son.

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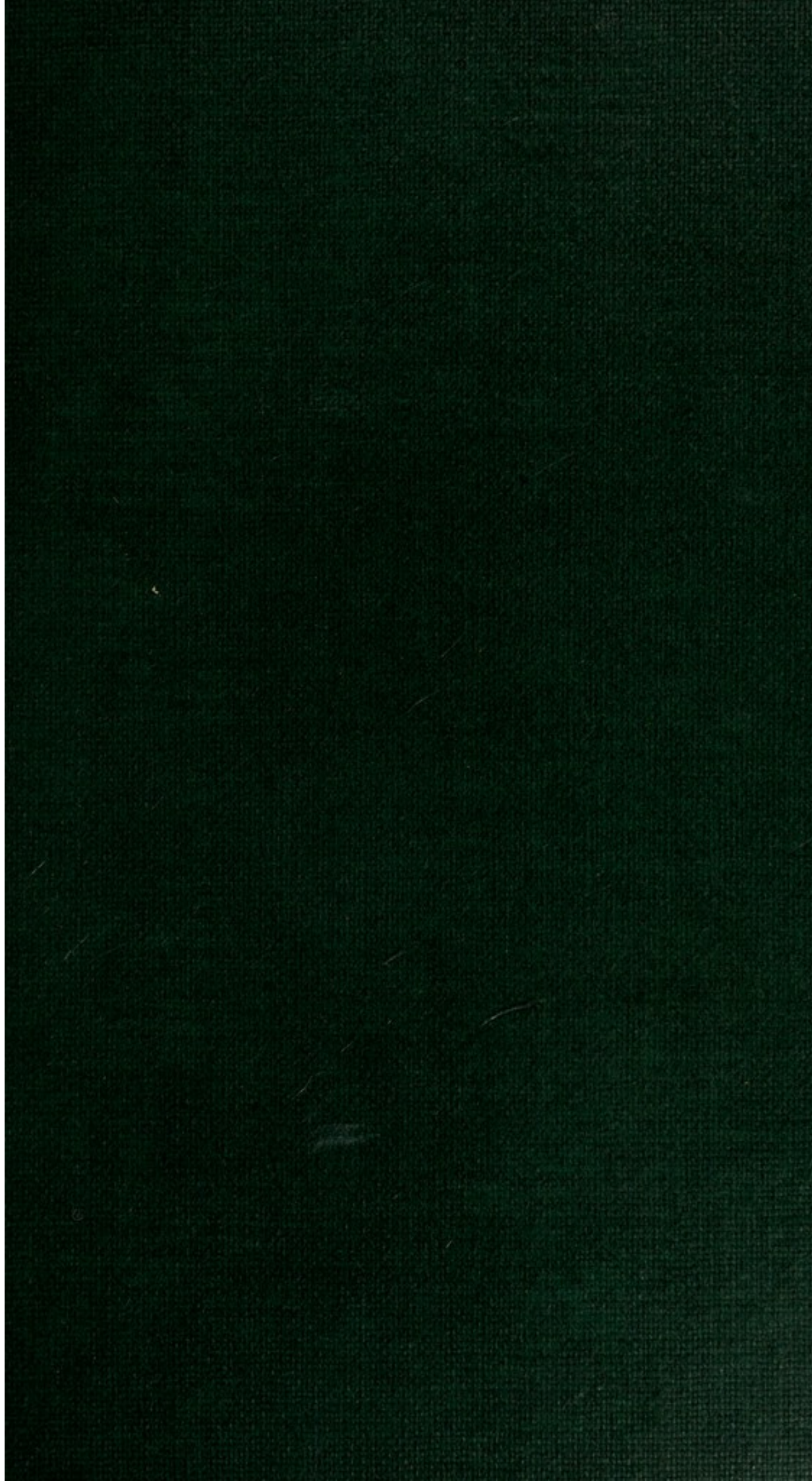
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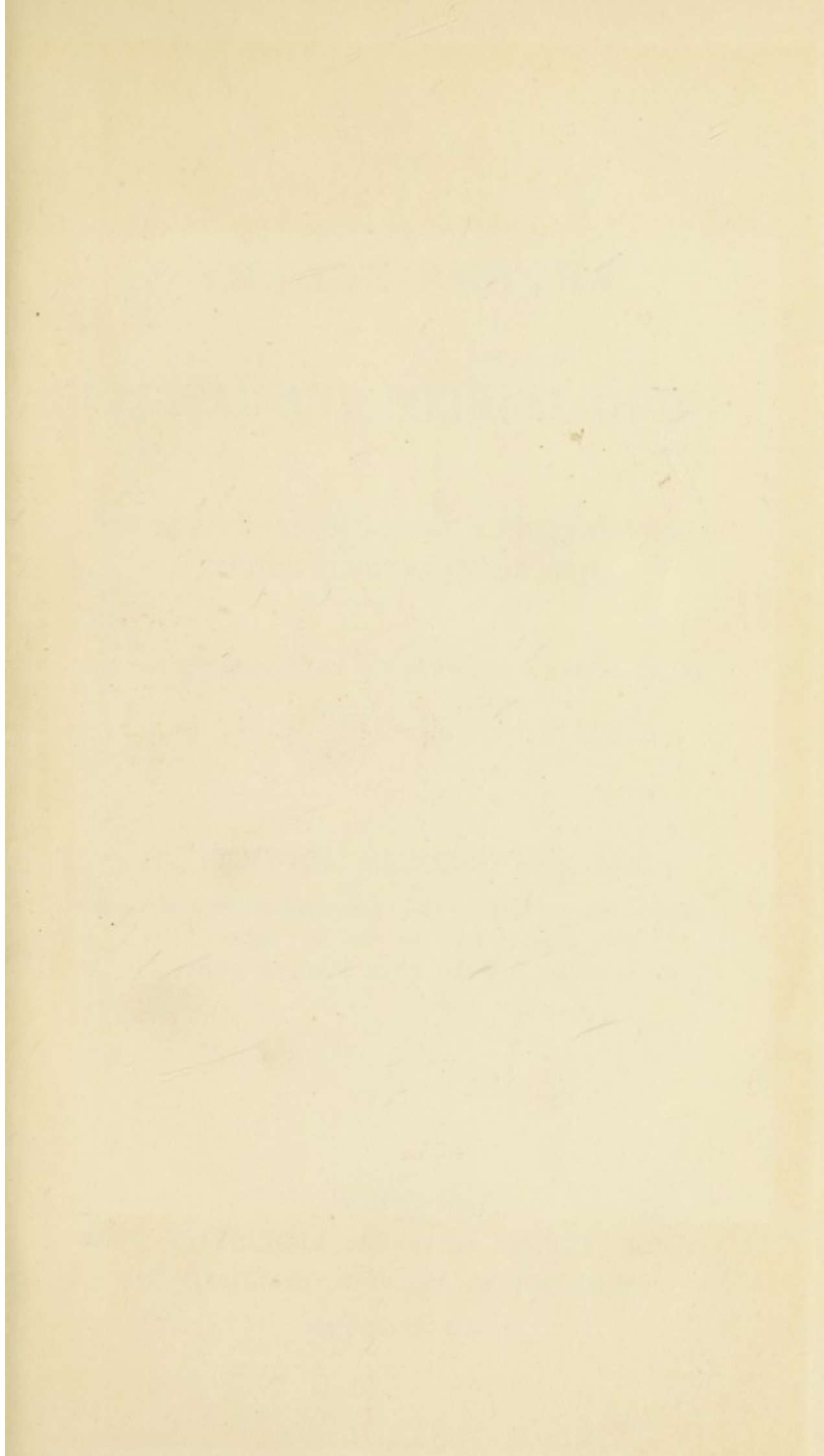
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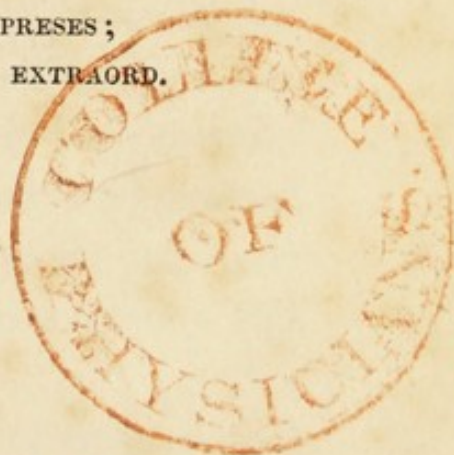
THE
VILLAGE PASTOR'S
SURGICAL AND MEDICAL GUIDE;

IN LETTERS FROM AN OLD PHYSICIAN TO A
YOUNG CLERGYMAN, HIS SON,

ON HIS ENTERING UPON THE DUTIES OF A PARISH PRIEST.

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EDINB. REG. MED. SOCIET. SOCIUS EXTRAORD.



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P R E F A C E.

It was long a matter of doubt with me, as it still is, I believe, with many of my professional brethren, whether medical works, written for unprofessional readers, were not calculated to do as much mischief as good. Now, however, with the experience of what the general improvement in education and diffusion of knowledge has effected in the dispersion of error, and the introduction of useful truths, on this, as well as on every other subject, either of art or science, I am decidedly of opinion, that the mind of that class, for whom such productions are intended, is prepared to seek, and enabled to receive, instruction on a subject so peculiarly interesting to every one as the preservation and recovery of health.

Every practitioner of my own standing must well remember the time when old nurses were the authority that regulated the treatment, not only of trivial

ailments, but of almost all the most serious disorders of infancy and childhood. Most mothers surrendered their judgment in these matters to the old nurse of the family, and every village had an old crone for its oracle in all matters of surgery and medicine. The farrago of absurdities, which was then generally practised, is now utterly discarded by all but the grossly ignorant; and to what, let me ask, is this improvement to be ascribed, but to a more free and candid intercourse between intelligent practitioners and their patients, and to the general perusal of popular treatises on medical subjects?

I am confident too, that, with growing intelligence on these matters, there is an increasing dependence on well-educated practitioners. Fathers as well as mothers of families, who have acquired rational views on this subject, now manage discreetly the minor accidents and ailments, which ignorant nurses formerly mismanaged; but they know too well the profound judgment and practical skill that is required for the treatment of more serious cases, to hesitate or procrastinate in calling for the aid of highly-educated practitioners, whenever such cases occur. Neither is it amongst the readers of popular medical treatises that we meet with advocates for advertised nostrums, pretending quacks, or illiterate bone-setters.

PREFACE.

The public being now accustomed to professional works written by surgeons and physicians of eminence, a sufficiency of general readers will, no doubt, continue to be found, to create a demand for further publications of the kind. The question therefore is not, whether such works do good or harm, but what style and character of writing will best instruct the reading public on a subject, so interesting to all, as the preservation and restoration of health.

The object of such a work, I apprehend, should be to prepare the reader to meet sudden emergencies, and to treat minor accidents and ailments; to teach him to discern danger, and to impress upon him the necessity of calling early to his aid the superior judgment, and acquired knowledge of the experienced practitioner in all cases of importance.

With these views I venture to add to the number of professional works for non-professional readers. I have selected the epistolary style as most free and familiar, and therefore best adapted for the communication of useful knowledge, when the pedantry of the schools and the jargon of technicalities are purposely avoided; and I have addressed myself more particularly to the Clergy, because from education they are better prepared to receive instruction, and to comprehend the limits, within which it

is intended to be applied in practice ; and because, from their position in society, they must necessarily be most frequently called upon to exercise their judgment, and bestow their advice on those, for whose ultimate benefit the work is designed.

Of all classes of society in all christian countries the ministers of religion hold pre-eminently the most important place. The possession and proper exercise of political power, it must be allowed, has a vast influence over the temporal happiness of nations, but the efficiency of the ministry of the gospel affects both our moral condition here, and our destiny hereafter. A national establishment affords the surest means of extending such a ministry over the whole population of a country, and this surely is one powerful argument in favour of its propriety. Every man of reflection, who can look back, as I can, upon the transactions of half a century, must rejoice at the vast improvement in the condition of our own established church. Merit is now the passport to the highest dignities, and the highest dignitaries are working safe and important improvements in the whole clerical community. The number of our resident village pastors has, within the last fifty years, been nearly doubled ; their education is of a higher order, and the zeal of a great proportion of them is more pure and more ardent ; and the time is fast approaching,

I trust, when every village in England will be blessed, and the eternal interests of its inhabitants be watched over, by such a resident clergyman of the established church.

That every such resident should hold a strong place in the affections of his flock is greatly to be desired : an interchange of kindly offices will surely both generate, and be generated by, such affection. And if the humble efforts of the author of this volume should in the slightest degree facilitate such interchange, one object of its publication will be attained : and should the less educated portion of such pastor's flock, only in a few instances, experience, through its means, restoration of health, or mitigation of bodily pain, the author's best feelings will be gratified, and his object will be then fully effected.

1. The first thing I noticed when I stepped
out of the plane was the cold air. It was
a relief after the warm air of the plane.
The ground was covered in a layer of snow.
The snow was white and soft. It was
a beautiful sight. I had never seen
snow before. It was like a white
carpet. The trees were covered in
snow. The sky was blue. The sun
was shining. It was a beautiful day.
I was happy to be here. I was
in a new place. I was in a new
world. I was in a new life. I was
in a new adventure. I was in a new
journey. I was in a new world.
I was in a new life. I was in a
new adventure. I was in a new
journey. I was in a new world.

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THE VILLAGE PASTOR'S
SURGICAL AND MEDICAL GUIDE.

LETTER I.

INTRODUCTORY.

MY DEAR SON,

DURING the progress of your general education from infancy to manhood, both your parents have, by the blessing of God, been spared to you; and the anxiety of both has watched over you. Their advice and their instruction have gone hand-in-hand with that of your preceptors; and now, at the moment of your launching into the exercise of extensive and important duties, your father is desirous of offering another token of his love.

During the progress of your professional education, you have had all the usual academical advantages, and have not lacked parental aid or parental prayers. You are now therefore, it is to be hoped, more able to direct your own future studies, to

form your own plans for the due performance of your pastoral duties, and are more competent to instruct others in the important interests of the soul, than I am to give you advice on these momentous occupations of a conscientious minister.

There is, however, a subject of minor importance, on which my own professional pursuits may have rendered me competent to give you some useful instructions and directions. I consequently feel that I have still a duty to perform in the capacity of a preceptor to my son ; and most sincerely do I hope that my present humble efforts to increase your usefulness amongst the poorer class of your parishioners, may be crowned with some success.

Situated, as you are at present, in a populous village some miles distant from a medical practitioner, you may expect to be frequently summoned to cases of accident or sudden illness, to consult with the friends of the sufferers, as to what had best be done on the spur of the emergency ; and so frequently do the ignorant and the obstinate decline altogether the regular professional aid that is within their reach, to resort perhaps to advertised nostrums or to the uneducated pretending quack, that you may often too be called upon to witness the effects of neglected or ill-treated cases of accident or disease, when you will naturally feel desirous of being able to render some assistance : and in many chronic ailments, after the ordinary medical attendance has been withdrawn, your gratuitous

assistance will be frequently sought, when any beneficial advice that you may be enabled to offer, will endear you to your poor neighbour and parishioner, and at the same time prove a high gratification to yourself. These are the motives which impel me to offer my professional instructions; and such I hope will prove ample inducements to you to endeavour to profit by them.

So far is it, however, from my intention in the following letters to aim at qualifying you to supersede the medical practitioner amongst your poor, that I earnestly advise you to cultivate the acquaintance of the medical gentlemen, who reside in your neighbourhood, and by a courteous deference to their superior attainments to endeavour to win their good opinion. Thus, when you meet in a sick chamber, whether you have been called there as a spiritual adviser, or to make use of your limited medical acquirements, you may expect always to meet cordially, and in the latter case to work together for the patient's temporal welfare by your undertaking to enforce the directions, and, in his absence, to promote the intentions, of the medical attendant.

Not pretending then to make you or any other person, who may chance to read these letters, a proficient in medicine, which cannot be effected without preparatory education, nor without that toil, and study, and initiatory practice, which every candidate for our profession is now happily obliged

to pass through, it shall be my aim to enable you to afford safe, certain, and prompt assistance in cases of emergency; to prescribe safely in certain simple cases of indisposition; to give useful temporary advice in others until medical assistance shall arrive; and, what will prove perhaps of equal if not of greater importance, to qualify you for aiding and assisting the medical attendant in effecting his object, which can only be done judiciously and efficiently by one, who is competent to comprehend the views and intentions, with which his various directions have been given.

The importance of such knowledge to every educated man might be reasonably insisted upon; but to the country clergyman, who is, or ought to be, the influential person in his parish, to be resorted to by his poorer neighbours on all occasions of emergency, it becomes, in my opinion, a necessary part of his acquirements.

In all cases of accident, how much of safety depends upon the first hasty steps that may be taken towards the relief of the sufferer! To staunch the bleeding from a wound, to place the drowned man in a suitable position, and to protect him from cold, to prevent the frost-bitten limb from being too suddenly warmed, to administer an antidote or an emetic to the poor creature, who shall have wilfully or ignorantly swallowed poison, will often be to save life. To direct the wisest means of supporting the broken limb, and of conveying the poor

sufferer to his home, to suggest the easiest mode of divesting such limb, or the dislocated joint, of its covering, will be to save the sufferer much torture, and perhaps, by preventing further injury, to expedite the cure.

In cases of sudden seizure, as of apoplexy, epilepsy, convulsions, or fainting, speedy assistance is of the first importance; some judgment is required to distinguish the nature of the attack, and, long before a medical attendant can arrive upon the spot, the patient may be saved or lost.

To prepare you, as well as I can, to meet such emergencies, will be the principal object of the following letters; and into what an increased sphere of usefulness must the acquisition of such knowledge introduce the resident village clergyman, who will most assuredly be the person first resorted to, and first consulted, in all cases of serious accident and sudden illness, when it is known to his poor parishioners that he is in possession of the requisite attainments to administer to their relief; and particularly so, if they know from experience, that he is at the same time graced with that philanthropy and christian charity, which is ever ready to relieve distress, and which cheerfully submits to personal inconvenience for the good of others.

I need not in this introductory letter specify the many cases of both acute and chronic illness, in which the pastor, thus instructed in certain general principles, and qualified by certain general rules to

know when to act and when to refrain, may safely and efficaciously administer to the relief of suffering humanity ; first, because you cannot be at a loss to apprehend how numerous and how various such cases must be in every populous village ; and secondly, because such examples must necessarily be detailed in the prosecution of my subject.

I may here observe, that I shall not, in treating of the various accidents and maladies, to which I purpose drawing your attention, adopt any scientific or nosological arrangement ; neither shall I introduce more professional terms than are absolutely requisite ; my object being, as I have before stated, to convey useful practical information to non-professional but educated men ; and where I believe that a medical education or professional experience is required to understand the subject, or to apply the practice, there I shall assuredly stop, that I may not perplex where it is my desire to instruct.

LETTER II.

ON WOUNDS.

MY DEAR SON,

It is my intention to treat in this letter of *wounds*, to cases of which you may frequently expect to be summoned, as they are of daily occurrence ; and when the wound is large, or when it is situated in

a vital part, it is sufficiently appalling to excite considerable alarm in all ordinary by-standers, and often indeed presents as formidable a case of accident as can come under the cognizance of the practised surgeon.

Although hemorrhage or bleeding to a greater or less extent is almost always the concomitant of a wound, still in simple wounds, where no large vessel is opened, the hemorrhage is so slight, and is so effectually checked by the means used for the proper treatment of the wound, that for this and other obvious reasons I shall here treat of those wounds, which are not accompanied with any considerable loss of blood, and afterwards treat separately of hemorrhage, whether proceeding from wounds or other causes.

In this, as well as in all other kinds of accident, you will be liable to be called to cases of every degree of severity; I shall therefore here make the general observation, that in considering the severest and most dangerous cases both of accident and disease, I shall be the most brief; for as I do not aim at qualifying you to supersede the medical and surgical practitioner, and as I do not profess to enable you to conduct safely the management of such serious cases, I shall only offer brief instructions, and give such simple directions, as may qualify you to ward off danger, and to afford temporary relief, until professional assistance can be procured.

Wounds in fleshy parts may be large and fright-

fully gaping without any serious or alarming hemorrhage. In all such, as well as in every flesh-wound of less dimensions, you will first strip the part of its clothing, wash away the blood with cold water, and carefully remove from the wound all extraneous matter, whether introduced by the nature of the accident, or, what is more usual, the ignorant officiousness of the patient or his friends. Sometimes a portion of the clothes, and more frequently a portion of the instrument, or other substance by which the wound was inflicted, as part of the blade of a knife, a piece of glass, a splinter of wood, or, at other times, particles of sand or gravel, may remain in the wound. These should in every case be washed away, or extracted, when it can be done without violence. Blood, dirt, or gravel, may be removed by careful washing with a sponge and cold water. Other extraneous bodies, which cannot be removed by the fingers, will require a pair of forceps, or pincers, according to the size of the extraneous matter. It will seldom, but may sometimes, happen, that you cannot easily effect this, either from the depth or peculiar situation of the wound, or from the extraneous substance having been forced into the bone; in such a case desist rather than use violence, and leave it for the adroitness of the surgeon; or for his consideration, whether to remove it by more forcible means, or by a counter-opening, or whether to leave it for the present buried in the wound.

The patient, or his officious friend, will often, before you arrive, have stuffed into the wound dry rags, or rags soaked in vinegar, perhaps a piece of tobacco, or a piece of felt from his hat, or some other substance supposed to possess the power of staunching blood—a rude and painful piece of surgery, and unnecessary with a view to stopping only a slight or very moderate degree of hemorrhage; because the same porous substances applied *over* the wound with moderate pressure, after bringing its edges together, would be equally efficacious by retaining the clotted or coagulated blood, which alone gives to such substances their styptic qualities. Remove all such foreign matter with the utmost care, for in wounds where the hemorrhage is slight, and the cut surfaces can be brought into apposition, and the edges brought into contact, this of itself will staunch the bleeding; and where the hemorrhage is considerable, other means must be resorted to, which I shall explain in the succeeding letter.

These, or any other foreign matter, allowed to remain within the wound, must necessarily prevent the approximation of the cut surfaces, and thus prevent the healing of the wound by what surgeons call the first intention, which means the re-union of divided parts without the formation of matter and the growth of new substance. This constitutes one of the most important improvements in modern surgery, and I wish to impress it strongly on

your mind, because the practice of stuffing foreign substances into the wound, and retaining them there, with a view not only of staunching the bleeding, but of producing what is vulgarly called a good rot, which means a copious discharge of matter, is still often adopted by the lower class, as I have just stated above; and the same baneful treatment is by no means exploded from the practice of the more ignorant of the farriers and leeches, in treating fresh wounds in horses and other cattle, where, you may be assured, that the same principle will apply as to the human frame.

Take this then as a general axiom, that recently divided surfaces in living animals brought into close contact, and retained there, will very generally unite, and that speedily; and this whether the corresponding portions or others of the recently divided parts are brought into apposition. The success, therefore, in treating such wounds will mainly depend upon our being able to bring the parts more or less into their natural position, and retaining them there till they have united.

Having indeed removed all foreign matter, having brought the edges of the wound into close and natural apposition, and having taken effectual means to retain them there, you will have done all that such cases require, and all that could be effected by the most experienced surgeon. The means of retaining the divided surfaces in the de-

sired position, must vary a little according to the extent and situation of the wound. When situated on the scalp it will be necessary to cut very close, or, what is still better, to shave off the hair to some distance around the edges of the wound, or the hair will prevent your plasters from sticking close. If the case be a slight cut on so small a member as a finger, or a toe, a simple narrow bandage of linen may be all that is required, or, at all events, a narrow slip of adhesive plaster, carried round the finger or the toe, will prove sufficient. If the wound be more severe, the divided edges irregular, or if it be on the surface of a larger limb, or on the head, or on the trunk of the body, adhesive plaster of a width and length adapted to the case will be required, and the proper application of it will call for some judgment, and a good deal of care and nicety. Several narrow slips are preferable to one broad one, and the length should be sufficient to insure its close adhesion to the sound parts beyond the wound. When the wound is considerable, and is situated on the arm or leg, it is advisable to have the straps sufficiently long to go more than round the limb, and the way to apply them is this:—Warm one of the straps slightly by passing it over some heated coals, or by holding it for a moment in front of a fire, take an extremity of the strap in each hand, apply the centre of it to that part of the limb exactly opposite the wound, draw it

tightly round the limb, and cross the ends of the strap over the wound at one of its extreme points, carefully bringing its lips into contact as you pass the plaster over them; then apply another strap in the same way, and another if required, until you have brought together and covered the whole extent of the wound.

When the wound is in a fleshy part and very deep, or when its edges are irregular and angular, producing loose flaps, it becomes necessary to use sutures, or stitches by needle and thread, in connexion with adhesive straps, to retain the cut surfaces in their natural state of apposition; but the judicious application of the adhesive straps is so very efficacious, that cases requiring sutures seldom now occur. When they do, however, it will be prudent to leave them to the surgeon, remembering this, that the application of the straps, till surgical assistance shall arrive, will still be useful.

To this simple mode of treating recent wounds I need only add, that linen compresses and bandages over the adhesive straps will be serviceable, particularly where the wound is large, or the motion of the part considerable, with a view of defending the wound from external violence, and retaining the plasters more accurately in their places.

The dressings should not be removed for three or four days, when it will generally be found that the parts are closely united. The sutures, if any have been used, may now be removed, and fresh

straps applied, not so large or numerous, or so tight, as before, the grand object of adhesion of the surfaces of the wound having been now in a great measure attained. Should the union by the first intention not prove complete, still, in all probability, so much adhesion will have taken place, as greatly to reduce the size of the original wound; and the cure will speedily be completed by the formation of matter, and by granulation, which is the growth of new substance. In such cases the superfluous matter on the surface of the wound may be absorbed by the gentle application of soft lint, but not by washing; and the same dressing as before may for the present be applied. The least degree of common sense will suffice, on future examinations of the wound, to direct the extent of the strap dressing from time to time, and also the period at which they may be entirely left off.

I have said that the wound should not be washed; and as the practice of washing all kinds of sores, whether from recent wounds or old ulcers, is still very prevalent, I must here remark, that if the matter secreted on the surface of a sore be of a healthy character, it is not only the most inoffensive substance that can come into contact with it, but that it is the best defence for the new growths, by which nature is repairing the mischief occasioned by the accident. The best-informed surgeons, therefore, remove this matter only where it is redundant; and this they do with the greatest care, lest they should,

at the same time, wipe off the newly-formed film, which is to be the future skin. And for the same reason they use the sponge and water only for the purpose of washing off the indurated matter from the sound skin, that surrounds the sore.

Should the parts in the neighbourhood of the wound swell and become painful a day or two after the accident, apply rags wetted in weak goulard lotion, or in simple cold water, freely over the dressings, give the patient a dose of salts, and order a low diet. This will reduce the inflammation, and all will go on well; but do not persist in the cold application after the swelling has subsided, and the pain abated, for be it always held in remembrance, that some degree of pain and tenderness is absolutely requisite to the healing of every wound.

After having thus described the simple and most approved mode of treating recent wounds of fleshy parts, I need scarcely warn you against the use of spirits, salt water, vinegar, or any of the nostrums of quacks, or Lady Bountifuls, with which you will be at first assailed, as specifics for making wounds heal speedily. No bathing or washing, in the first instance, can do good but by removing foreign matter; water does this effectually and with the least pain. Salves, cerates, or anything else, interposed between cut surfaces, interfere with nature, and prevent healing, and other application than adhesive or sticking-plaster is worse than useless. When the wounded part is at the same time much

bruised by the accident, it will be advisable to foment with warm water for an hour or two before using the adhesive plaster, and the straps must be used with some caution, and be drawn less tightly ; and it will be well to apply poultices over the dressings, or to cover them with folds of linen soaked in hot water, and to put over these a covering of oiled silk, for the purpose of retaining the warmth and moisture.

When called to a case of wound connected with fracture of a bone, or dislocation of a joint ; to a wound of the head, where the patient is senseless or confused ; or to a wound that penetrates the cavity of the chest or abdomen, or in which any important organ may be supposed to be injured, send immediately for surgical assistance. In the mean time render what aid you can in removing the patient to his home, laying him on his bed, and stripping off his clothes from the injured part, in doing which your judicious directions and tender assistance may save the poor sufferer much pain, and by such preparatory steps you will expedite the relief to be obtained, when surgical assistance shall arrive.

There is another kind of wound, which deserves a little consideration, particularly as from its very nature it is not susceptible of the treatment just described as proper in incised wounds. I mean a *punctured wound*, such as is made by the thrust of a sharp-pointed instrument, or other pointed

body, as a thorn, or a fine splinter of wood, glass, or other hard substance. Such a wound generally bleeds very little, if at all; but, if an artery of some size be pricked, the bleeding is considerable, and this accident will be more properly adverted to, when treating of hemorrhage. It is also evident that a punctured wound may penetrate the brain, or other vital part, and become instantly or speedily fatal; or it may enter the cavity of the chest, or the belly, and wound parts of more or less importance in those cavities. In all such accidents commit the patients to proper surgical assistance, as it requires much anatomical knowledge to ascertain what important organ may have been injured, and to what extent.

But suppose a pin, a needle, a thorn, or any fine splinter, to have been thrust into a fleshy part; the pain will generally be much more severe than in an extensive flesh-wound, or, as it is technically called, incised wound. First, examine accurately, to ascertain whether any portion of the instrument be broken off and lodged in the wound; and if so, use the ordinary means of extracting it. A small thorn or splinter may frequently be brought to the surface and taken out, by pressure on the soft surrounding parts, which may sometimes effectually be made by firmly pressing a key with its hole immediately over the wound. In other cases, a pair of forceps will enable you to withdraw the offending substance, and in others a trifling enlargement of

the wound by a lancet, will bring the thorn, or whatever else it may be, within view, so that it may be easily extracted. If a needle, or other pointed body, completely embedded in the flesh, can be grasped endways between the fingers and thumb, the point may be made to penetrate the skin from within outwards, so as to be easily withdrawn. A fishhook, buried in the flesh beyond its barb, must be withdrawn in the same manner by carrying the point onwards, so as to penetrate the skin from within outwards. In cases of more difficulty leave the extraction to abler hands.

Whether anything be permanently lodged in the wound or not, the proper applications will be warm fomentations and poultices; and here again I must caution you against nostrums. It is not uncommon to apply the term drawing to certain hot stimulating unguents and plasters; and several such are extolled for their power of bringing whatsoever is lodged in a wound to the surface; but believe me, this is always done, and only done, by the natural process of inflammation proceeding to suppuration, or the formation of matter, and the consequent absorption or removal of the interposed parts between the substance and the surface of the skin. This suppuration may be to any extent, according to the size of the body lodged in the wound, and other circumstances, from a small pustule, containing only a single drop of matter, to a large abscess containing pints.

Remember, for your guidance in all such cases, that nothing expedites this natural process more than the free, and frequently repeated, application of fomentations and poultices; and that nothing affords, at the same time, greater relief to the pain attending every punctured wound. Remember also, that it is of little moment of what ingredients you compose either your fomentation or your poultice; warmth and moisture are the required qualities, and nothing is more efficacious than hot water for your fomentation, and bread and water for your poultice. Repeat the former every two or three hours, and keep the wounded part constantly enveloped in the latter during the intervals. If the wound is in the hand or foot, or any other part that can be conveniently immersed in a vessel of hot water, this and a sponge will be all that can be required as a fomentation; in all other cases flannel cloths, wrung out of hot water, must be laid over the wound, extending as far from the punctured part as the pain extends, which will, in some cases, be over the whole limb. Continue the fomentation for half an hour or more, and then apply the soaked bread, or bread and water poultice.

Bites from animals with sharp teeth, as fishes, cats, and some other animals, partake of the nature both of punctured wounds, and incised wounds, and are sometimes termed lacerated wounds. The treatment must partake more or less of that recom-

mended in each, as it is found to assimilate more or less with one or the other. Where the pain is more of that character termed aching, rather than smarting, the fomentations and poultices will afford most relief.

The bite of certain insects and reptiles, and the sting of others, as well as the sting from certain plants, are also punctured wounds, but with the addition of a poison introduced into the wound. The latter circumstance accounts for the succeeding inflammation being so disproportionate to the wound, and which, in certain irritable constitutions, runs high, and requires constitutional treatment. In all cases of sting or bite, it is a good plan to suck the part perseveringly, whenever it can be done, by which means the absorption of the poison into the circulation is suspended or prevented, and the warmth and moisture thus applied, act as a fomentation to the part. It is a fact pretty generally known, that no mischief ever ensues from the poison thus entering the stomach of the person who sucks the wound, not even the poison of the viper, which is the most virulent of British animal poisons, or even that of the rattlesnake of other climes.

The best external application to the bites and stings, which occur in this country, is laudanum, or else goulard, or other cooling lotions. Some have advised moistened chalk to be laid over the parts stung by bees or wasps, with a view of neutralising

the supposed acid quality of the poison. Of this I have no experience.

The viper (*Coluber Berus* of Linnæus) is not an uncommon animal both in the woods and fens in this neighbourhood, and the bite of it occasionally produces high inflammation over the whole limb. Where suction of the wound cannot be had recourse to, and fully persisted in for hours, I advise a tight ligature to be applied a little above the wound, till a surgeon arrive; or if the future treatment devolve upon yourself, apply a few drops of a strong solution of lunar caustic to the puncture, and if inflammation is already set up in the neighbouring parts, draw a moistened stick of lunar caustic over the inflamed surface a few times, as has of late been recommended in other inflammations of the skin; after which foment and poultice the part, and administer a smart dose of physic. The affected limb should be kept perfectly at rest, and, if it be the hand or arm, it should be supported in a sling. Rest and low diet must be strictly enjoined until the inflammatory symptoms have subsided. Others have recommended olive oil as an antidote to the bite of the viper, and advise that the whole limb should be well anointed and rubbed with this oil, as soon as possible after the bite, and be frequently repeated. I am disposed to give the preference to the former plan as better calculated to destroy the poison, and prevent

absorption, if it be had recourse to sufficiently early ; but when the swelling of the limb has already taken place, the olive oil may be used in addition to the fomentation and poultice, and the constitutional treatment be the same as recommended above.

I shall not, perhaps, find a more appropriate place than this for an observation or two on the bite of a mad dog, or other rabid animal. First, let me premise that you always hold in mind the importance of preserving the life of the animal, where it can be safely done, to ascertain the certainty of its being hydrophobic ; for most assuredly the alarm has frequently been needlessly excited ; and, where the animal has been instantly destroyed, the life of the sufferer has been rendered miserable by groundless apprehensions. In every case, therefore, where it is possible, tie up the dog, and watch the progress of its symptoms.

Wherever there is reason to apprehend that the animal is mad, immediate excision of the part is the only safe proceeding, and the patient must immediately be placed in the hands of a skilful surgeon for that purpose. At the moment of the accident, however, and until able assistance can be obtained, I strongly urge in the first place suction, and, where the wound bleeds, warm fomentation to encourage the bleeding. When very little or no blood flows, apply a ligature above the wound if it be on the leg or arm, to prevent absorption of the poison ; or, if it can be done, apply with the same

view a cupping-glass well exhausted, and allow it to remain until surgical assistance shall arrive. A common glass tumbler or wineglass, according to the size of the wound and situation of the part, may be substituted for the cupping-glass. The easiest mode of exhausting such glass for an inexperienced person will be this:—take a single piece of thin paper, as cap-paper or newspaper, about two inches long and one broad, moisten it in brandy or other spirits, set fire to it, drop it quickly into the glass, and *instantly* invert the glass over the wound; if the flesh rise under the glass and the glass be firmly retained in its place without holding, you may be satisfied that the air is sufficiently exhausted, and nothing more need be done until the surgeon arrive.

Gunshot wounds are a species of accident too formidable to be treated of in a popular work like the present. They uniformly demand the skill of an able and scientific professional man; and I shall dismiss the subject with this single observation— if attended with profuse bleeding, apply a tight ligature above the wound, or a series of compresses and a firm bandage over the wound, as will be more particularly described in the next letter; and if, as is much more commonly the case in gunshot wounds, there be no bleeding, envelope the whole wounded part in a bread and water poultice, renewing it every two or three hours till the arrival of the surgeon.

There is another most appalling species of wound to which you may be summoned, and to which I shall only slightly advert, because from its magnitude and importance it will in almost every case demand the surgeon's skill. I mean the ineffectual attempt at suicide by cutting the throat. Happily this attempt does frequently fail of its end, but seldom without a formidable wound and great loss of blood. All that you can do in such cases is to sponge with cold water, bring the loose flaps as well as you can into their natural position, apply two or three compresses of linen, and fasten them by a handkerchief tied round the neck as firmly as can be done without interrupting respiration.

LETTER III.

ON HEMORRHAGE OR LOSS OF BLOOD.

MY DEAR SON,

THE next important subject for our consideration is hemorrhage or loss of blood; and whether this occurs spontaneously by the rupture of a vessel, or accidentally from a wound, if the loss of blood be considerable it is most appalling in its effect upon the poor sufferer himself, and upon ordinary bystanders, and sufficiently alarming to the experienced surgeon to require all his coolness and

collectedness, to enable him to grapple with it promptly and with judgment.

Before proceeding to the consideration of these cases, I think it will prove conducive to the right apprehension of my instructions for the treatment of them, if I premise a very concise description of the circulation of the blood, and then offer one or two general observations on the effect of loss of blood upon the general system.

That the blood in living animals is constantly in motion, that it circulates through certain tubes, called arteries, from the heart, and returns by others, called veins, to the heart again, was the discovery of the immortal Harvey, made rather more than two hundred years ago, and it may now be said to be universally acknowledged and understood.

In man and all warm-blooded animals, the heart consists of four cavities or chambers, and is called double; and the circulation, as I shall now briefly describe it, is called a double circulation; whereas in cold-blooded animals, as fishes, the heart has only two cavities, and the circulation is called single.

To describe the double circulation of man and warm-blooded animals, we may begin with the arrival of the venous blood, which is of a dark and purplish hue, into one of the chambers of the heart called the right auricle, from whence it is transmitted into the right ventricle; by the muscular contraction of the coats of this cavity the blood is

propelled into a large tube or vessel, called the pulmonary artery, by the ramification of which into smaller and smaller branches, it is circulated through every portion of the lungs; in the minute extremities, of these arteries the blood comes into such near approximation with the air inhaled in respiration, as to be materially changed in its chemical qualities, by processes not fully understood by our cleverest physiologists. Suffice it to say, that the colour of the blood is changed from a purple to a florid red; it has parted with some impurities, and thus arterialised, has become fit for the purposes of nutrition, and the support of life. In this state it is taken into the minute veins of the lungs, and, being transferred through larger and larger branches into the trunk, called the pulmonary vein, is conveyed to the heart again, where it is received into the left auricle, and this constitutes the lesser circulation of the blood. The left auricle transmits its contents into the left ventricle, by the muscular contraction of which the blood is forced into the large artery, called the aorta, and through its numerous ramifications the arterial blood flows to every part of the body, to the internal viscera, as well as to the surface, to the head, the trunk, and the extremities. In the extreme vessels this arterial blood, having effected all its important offices of secretion, by which the living machine is matured, supported, and repaired, and having at the same time gradually assumed the dark hue and other

characters of venous blood, enters the minute veins, is collected into larger and larger branches, and at length passes back by the large trunk, called the vena cava, into the right auricle, whence we commenced our description of the double circulation.

When summoned to a case of bleeding, you will now easily understand, that, if the blood be of a florid red, you may conclude that it has proceeded from an artery, and if of a dark and purplish hue from a vein; in cases of hemorrhage from recent wounds too, I may here observe that the blood from an artery flows *per saltum*, or by jerks, whereas from a vein it proceeds in a uniform stream; and you may bear this in mind also, that the loss of blood from an artery is usually more rapid, and consequently more dangerous, than it is if it proceeds from either one large or many small veins.

Another deduction of easy inference from the above description of the circulation is this, that when blood is flowing from a wounded *artery*, in a situation where pressure can be applied, this must be done between the heart and the wound, for the purpose of cutting off or intercepting the supply of blood; for example, if the wound be in the foot or the leg, apply your pressure, by ligature or otherwise, upon the artery, anywhere in its course above the wound, as in the ham, or in the upper part of the thigh, where the pulse is easily felt from the artery lying more superficially. Whereas if the blood be venous your pressure must be applied be-

yond the wound; thus, when a vein is opened in the arm in the operation of bleeding, pressure upon the vein immediately below the orifice will effectually stop the flow of blood, but gentle pressure above, as is evidenced by the effect of the bandage applied in bleeding, increases the flow of blood. I say *gentle* pressure, because it is obvious, that if it be sufficient to obliterate the cavity of the artery, as well as of the vein, (and the two vessels here, as in many other situations, run parallel and near together, the artery, however, more deeply seated than the vein,) the further supply of blood must necessarily be prevented.

The general effects of loss of blood are various, some immediate and others distant. I am here more particularly desirous of drawing your attention to one of those effects, which speedily and almost constantly succeeds to considerable loss of blood,—I mean syncope or fainting. This, be it remembered, is a most salutary provision of nature, it being usually attended with so feeble an action of the heart and arteries, as almost to suspend the flow of blood, and you will consequently observe, that the bleeding from a wound nearly or altogether ceases, as soon as the patient has swooned or fainted quite away.

The proximate or immediate cause of fainting, is the withdrawal of the usual quantity of blood from the brain; and as the flow of blood to this organ is at all times considerably influenced by the posture

of the body, according to the common laws of gravity, it follows that an horizontal posture of the patient's body, and more particularly if the head be depressed, prevents, or at least retards fainting, by accelerating the flow of blood to the head, and equally promotes recovery from that state, if it have already taken place; whereas the erect or semi-erect posture, by checking the flow of blood to the brain, accelerates fainting, or retards recovery from it. On these facts depend many of the instructions and directions, which I am now about to give for the treatment of such cases of hemorrhage as I may suppose you to be liable to be called to. And here once for all I request, that you will bear in mind, in the perusal of these letters, that I do not intend to treat the various subjects either so fully, or so scientifically, as I should do, were I writing for the instruction of members of my own profession; and I shall moreover endeavour to select only such subjects and such cases, as I deem likely to be practically useful to the village pastor.

Having thus premised a few general observations, I shall proceed in my endeavours to prepare you to meet those sudden cases of alarm and difficulty, which, unless judicious assistance be promptly given, threaten the life of the sufferer by loss of blood.

Hemorrhage may occur spontaneously, as it often does, from the nose, the lungs, or the stomach; it may proceed from recent wounds produced either

by accident, or by the knife or other instrument of the surgeon; or it may proceed from the sudden rupture of a vessel on the surface of a wound not recent, or of an ulcer of long standing. In this order, then, I shall proceed to treat the subject.

Bleeding at the nose is an event of very common occurrence, and, when it has been occasioned by a blow, or other accident, seldom if ever demands attention. When it occurs spontaneously, it often relieves the patient from headache, and occasionally prevents impending danger; when, therefore, the patient is strong, and apparently full of blood, with a tendency to apoplexy, be not alarmed at even a considerable loss of blood in this way. If, however, it occur in a more delicate person, naturally feeble, or reduced by disease, or if it has occurred so frequently, or to such an extent, as to blanch the countenance, and reduce the strength, it is not unattended by danger. If called to such a case, or to any other case of profuse bleeding, attend to the temperature both of the patient and the room, which latter should be preserved rather below the degree, that is to say rather colder, than what is usually considered agreeable. If it is summer-time, the windows should be open, the clothing light, and if the patient be in bed, a sheet should be the only covering. In all cases of excessive bleeding from the nose, if fainting has not already been induced, keep the patient in the erect or sitting posture, with a view of retarding the flow of blood to the head,

apply cloths, made cold by soaking in cold water, to the forehead and face, to the nape of the neck and the shoulders; in the next place nip the nose firmly between the thumb and finger, which will sometimes stop the bleeding; but if this does not succeed, then stuff up the bleeding nostril by small pledgets of lint soaked in elixir of vitriol mixed with water, in the proportion of one part of the former to three of water. If these measures, persevered in for a reasonable time, do not stop the flow of blood, and if, when the pledgets prevent its exit by the nostril, the blood finds its way by the back of the nostril into the mouth, the lint may be withdrawn as useless, and recourse must be had to the application of a similar pledget through the mouth to the back of the nostril. This may be at first attempted in the following simple method; but, lest it should not succeed, the surgeon should, in the mean time, be sent for, that he may, if necessary, effect it by proper instruments invented for the purpose, and thus save the patient from imminent danger. The simple plan I have alluded to is this: Procure a piece of strong thread, and, giving one end to the patient, direct him to put it up the bleeding nostril, and by forcible and repeated snuffling, to endeavour to bring it into the mouth; if this be done, you draw it sufficiently out of the mouth to allow of your fixing to this end of the thread a small pledget of lint or rag, about the size of a filbert, moistened in the diluted elixir of vitriol, and then,

by means of the other extremity of the thread, which you have carefully retained in your hand, you draw back the pledget through the mouth till it reach the back of the nostril; and, keeping it firmly in its position, you now proceed to plug up the same nostril with fresh pledgets; thus by confining the blood from escape, it will coagulate at the mouths of the bleeding vessels, and by this means, and by uniform pressure on these minute vessels, effectually check all further hemorrhage. The pressure should be continued by these means about twenty-four hours; the pledgets may then be carefully removed, and the patient cautioned against picking or blowing the nose for another day or two.

Blood passed in large quantities by the mouth may have proceeded from the lungs, or from the stomach, and in either case may be so profuse as to excite reasonable alarm. Nothing indeed is more appalling than to see a patient, as I have often done, bringing up pints, indeed I may say quarts, of blood, his countenance blanched, his face bedewed with perspiration, and his extremities deadly cold. It is no wonder that such a scene should terrify surrounding friends; and we can scarcely feel surprise at finding, as we usually do, the bedroom of such a suffering patient crowded with neighbours and acquaintances. More than half of them have been brought there by no better motive than curiosity, or that love for sights of

horror and distress, so particularly prevalent amongst the uneducated, which so generally brings a crowd to the scene of any serious or dreadful accident, and as commonly fills the chamber of the dying in the lower classes of society. The annoyance, which this occasions to the medical practitioner, will be equally experienced by yourself, when called upon to administer medical or surgical aid, and still more so, I apprehend, when your spiritual duties are required. In all such cases then, let me advise you to rid yourself in the very first instance of all unnecessary attendants. Remonstrate mildly but firmly; call in the aid of one or two of the more discreet to urge the removal of the obstinate, and make a show of declining to assist the sufferer till the room is cleared of all but the required aid.

In these cases of blood issuing from the mouth, if it be attended with coughing, if the blood be frothy and florid, and if it be but little or not at all clotted, you may feel satisfied that it proceeds from the rupture of a vessel in the lungs. If, on the other hand, the blood comes up in a clotted or coagulated form, if it be dark coloured, and particularly if it be mixed with food, you may be quite sure that it comes from the stomach. In very many cases, however, it is difficult even for a medical man to decide from which source the blood proceeds; for in the case of a rupture of a small vessel in the lungs, the blood will sometimes be coagulated be-

fore it is expelled, and when it comes from a larger vessel in the stomach, it is frequently both fluid and florid, and of course it may be unmixed with any food. Blood from the upper part of the lungs, or above the division of the windpipe, often finds its way into the mouth without coughing; and blood from the stomach is sometimes raised by an effort partaking partly of the character of vomiting, and partly that of coughing. In such uncertain cases the professional man alone can solve the doubt, by taking into consideration the constitution and habits of the patient, as well as the history of preceding symptoms. The immediate danger is considerable in either case, if the quantity of blood is very great, but most so if it comes from the lungs; and as to the ultimate risk, where the quantity is more moderate, it is infinitely greater in hemorrhage from the lungs; first, because it is much more likely to recur again and again, and in the next place, because it is so frequently the forerunner of consumption.

As to the treatment of cases of this description, I may observe, that whether the blood come from the lungs or the stomach, you should pay the same attention as formerly directed to the coolness of the room, and the lightness of the clothing; and, unless fainting has occurred, make the patient preserve the semi-erect position, with a view of favouring such a result. If the symptoms are decidedly those of a rupture of a vessel in the lungs, you may, if you have acquired the art of bleeding, immedi-

ately proceed to that operation, and abstract from one to two pounds of blood from a vein, according to the strength of the patient; and as syncope or fainting will be a desirable event, do not neglect to place your patient in the sitting posture whilst the blood is flowing. You may, in the next place, whether the bleeding be from the stomach or the lungs, give half an ounce of Epsom salts with twenty drops of elixir of vitriol in a tumbler of cold water, as an aperient, and afterwards half a dram of the salts with ten drops of the elixir in a wine-glassful of water every four hours. You may allow cold acidulated drink, or acid fruit, and then resign your patient to the care of the medical practitioner.

We have another example of spontaneous hemorrhage in the bleeding which frequently takes place from piles. What are commonly called piles are sometimes enlarged veins, but more frequently membranous cysts which are occasionally distended with blood, situated about the anus, forming blue or purplish tumours, sometimes single, sometimes numerous and clustered like so many grapes. They are usually situated just within the verge, and are only occasionally forced down by the natural efforts made at stool. When this occurs, the pile or piles are sometimes strangulated by the closing of the sphincter, which occasions considerable pain, and some force is required to reduce or push up the strangulated portion into its natural position within the anus. When a tumour of this kind bursts, it

is denominated a bleeding pile, the patient when he goes to stool voiding more or less of dark venous blood with, or immediately after, the natural evacuation. At other times the swollen tumour itself, by pressure on the sphincter, produces the sensation of a desire to go to stool, and the effort is followed by a discharge of blood alone. The quantity of blood thus lost is sometimes moderate, and proves salutary; at other times many pounds are evacuated in the course of a few days, and the constitution suffers. In cases of long standing, the frequently-distended vein, or rather the preternatural cyst, forms a permanent tumour, and is the frequent source of irritation, and often becomes inflamed and painful. These are vulgarly called blind piles. It is either when piles bleed inordinately, or are the occasion of considerable pain, that they become the subject of medical or surgical treatment. Under ordinary circumstances patients submit to the occasional recurrence of the inconvenience, under the persuasion, which I believe to be correct, of the relief experienced by the discharge. This is particularly the case in fat persons and in full habits, where there is tendency to apoplexy, or where there is chronic disease of the liver.

When consulted in a case of piles, in consequence of pain with little or no bleeding, the greatest immediate relief is obtained from the application of a few leeches to the verge of the anus, and upon the protruded tumours, where there are such. Fomen-

tations and sitting over the steam of hot water afford also some relief, after which the occasional use of the pile ointment* will more permanently relieve the patient. The direction for the use of this ointment is, to introduce a piece of the size of a horse-bean within the verge of the anus every night and morning, as well as after every evacuation, and to use some little friction, or rubbing in of the ointment within the anus. This and repeated doses of a mild aperient, as what is called milk of sulphur, is all that will be required in cases of piles such as ought to be submitted to your management. In cases of immoderate bleeding, as well as in cases of blind piles or hemorrhoidal tumours requiring extirpation, the surgeon must supersede you, and in such cases it will be your duty to call him in.

We may now proceed to the consideration of accidental hemorrhage, or the bleeding from recent wounds; and we shall, in the first place, suppose a person to have received a cut from a scythe, sickle, knife, or other cutting instrument, on the arm, leg, head, or any other part of the body, and that the wound bleeds profusely. When you arrive at the scene of such an accident, you will generally find that rags or other substances have been crammed into the wound, or bandages have been rudely tied around the limb, but that the blood is still oozing, trickling, or perhaps streaming from under the ac-

* For this and all other prescriptions, see Appendix.

cumulation of rags and clotted blood. If the patient have already fainted, you may lay him down in the horizontal position, but if not, preserve him in the sitting posture; and before you remove the rude dressings, consider well whether the situation of the wound allows of pressure being made upon the main artery, which supplies the wounded vessels; this, remember, may always be easily effected, if the wound be situated on either of the extremities. Thus, if it be on the hand, pressure may be applied upon the artery in the wrist; if on the arm, apply pressure higher up on the arm than where the wound is situated, or apply it in the axilla or arm-pit. If the wound be on the foot or leg, apply your pressure on the artery in the ham; if on the thigh, feel for the beating of the large artery in the groin, and apply your compress there. And remember further, that if pressure on the artery at the wrist or in the ham be found to be ineffectual, which it sometimes will be, the hemorrhage may always be stopped by pressure on the main artery in the arm-pit in the former case, and in the groin when the wound is on the foot or leg.

Before proceeding with our instructions, we will here say a few words on the best mode of applying this necessary pressure. The surgeon uses an instrument for this purpose, called a *tourniquet*, which consists of a strap to surround the limb, a cushion to be applied over the artery, and a screw with which to tighten or slacken the bandage, and

thus to regulate the degree of pressure. This little simple apparatus, when properly applied, gives a complete command over the bleeding vessels, and, as it is both simple and cheap, I strongly advise you to provide yourself with one; and also that you request some surgical friend to give you the necessary instructions, which are but few and easily understood, as to its use, and also as to the precise parts on either extremity, where under given circumstances it may be best applied; for I am well aware that five minutes of judicious practical instruction will make you more expert in this piece of surgery, than a whole chapter of written directions.

But suppose that no tourniquet is at hand, a pretty good substitute may everywhere be found; for a ribbon, a garter, or any piece of sufficiently strong string, and a short piece of stick with a pad of any kind of cloth, a piece of hat, or even a folded piece of paper, will suffice. Apply the pad over the artery in any part of its course above the wound, tie the ligature loosely round the same part of the limb and over the pad, introduce one end of the stick under the ligature, and having by a twist got both ends of the stick above the cord or ligature, and the cord once round the stick, by continuing to twist the stick on its own axis, you may with the greatest facility command the required pressure.

After having thus secured your patient from the

further loss of blood, you may proceed to remove the load of rags, &c. from the wound, to wash away the clotted blood, and to examine at leisure the nature and extent of the accident. If you momentarily loose the ligature or bandage by slightly untwisting the stick, or by unscrewing the tourniquet, you will in all probability discover the wound in the artery by an instantaneous jet of florid arterial blood.

Now arises the question as to the propriety of securing the vessel by taking it up, as it is termed, and tying it with a silk thread well waxed: but as this operation requires some nicety, I advise that you leave the consideration of the propriety of it altogether to the surgeon, and also that you leave it to his manual dexterity, if it be required.

You may, however, in the absence of the surgeon, proceed with such a wound as with any other, where the bleeding is less profuse, and try the effect of pressure over the wound in the manner which I am now about to describe, with the hope of its being sufficient to check the hemorrhage, which it will effectually do in many cases, where the bleeding artery or arteries are small, or where, from the situation of the wound, the proximity of the bone, or other circumstance, you can apply your pressure firmly. You may proceed in this step with the full assurance that, if the surgeon on his arrival finds it necessary to remove your dressings, and to take up the artery, you can have done no harm, and

that you will, in all probability, have done much good, and perhaps have saved the patient from much suffering by thus temporarily checking the hemorrhage, and by having prevented the continued exposure of the wound to the external air. For it may be observed here, that although exposure of a bleeding surface to the cold air will, in cases of a moderate degree of hemorrhage, have the effect of checking it, and ought therefore to a certain extent to be adopted, yet in severer cases, where exposure has not had this desirable effect, much pain will be avoided by excluding the external air.

Having, then, discovered the wounded artery by the jet of blood, put your finger in the wound, directly upon the point from whence the jet proceeds, and continue this pressure for five minutes; if, upon withdrawing your finger and loosening the tourniquet, the blood does not issue afresh, close the wound as directed when treating of simple wounds without hemorrhage, only observing that it is here requisite to apply a firm compress over the part corresponding with the wounded artery, and to retain the whole by a tighter bandage. Should, however, the jet of blood return after the removal of the temporary pressure of the finger, instead of closing the wound you must introduce a very small piece of sponge, felt, or agaric, or a pellet of moistened paper, into the wound, and press it down upon the bleeding vessel, then another piece somewhat larger over the first; a third and a fourth

piece also, if required, until these compresses are level with the surface of the wound; when a much larger fold of lint or cloth of many doubles must be firmly applied over the whole wound, and retained by a tight bandage round the limb.

In all cases where the hemorrhage has been considerable, you must allow the tourniquet or its substitute to remain on till surgical aid is at hand. It need not, however, be left so tight after the application of the compresses just described, as was necessary to stop the bleeding in the first instance; but a judicious nurse or other attendant must be instructed how to tighten it, if blood is observed to be trickling through the dressings.

Should the arrival of the surgeon be delayed for many hours, serious injury, amounting even to mortification of the limb, might arise from so long a stoppage to the circulation of the blood, and it will, therefore, be advisable that you occasionally loosen the tourniquet with caution, for a second or two, watching at the same time whether the hemorrhage be renewed.

When called to a wound on the head attended with much loss of blood, pressure applied over the wound will generally suffice to stop the bleeding, because there is so little depth of flesh between the surface and the bone. When you have moved the coverings from such a wound, and have washed away the clotted blood with a sponge, you will, in all probability, perceive the fresh blood escaping

by jets ; you will thus easily discover the wounded artery, and may by pressing upon it with the tip of one of your fingers, as easily suppress all further hemorrhage. You may now proceed coolly to give any necessary directions for the patient's comfort, you may remove any of the rude dressings that remain, wash away all blood from the neighbourhood of the wound, and accurately examine its extent and nature. You must next place the loose scalp in its natural position, bring the edges of the wounds as much as possible into contact, and cautiously removing the finger that has hitherto been pressing on the bare artery in the wound, you must expertly replace it by another on the surface of the skin over the same point. A compress of rag and a fillet, or other proper bandage, having been prepared, you remove your finger, place the compress directly over the wounded artery, retain it in its place by the fillet, watch for a time whether any further hemorrhage ensue, and, if not, you may consider your patient so far safe ; and according to the extent of the injury, or severity of accompanying symptoms, you will transfer the case to the care of his friends, or to that of the regular surgeon. Should the blood, however, continue to trickle down from under the dressings, you must direct an attendant to preserve a constant firm pressure by the hand, until the arrival of the surgeon, who will, in all probability, have recourse to the complete division of the wounded artery, which,

by allowing the retraction of the divided extremities, effectually prevents all further hemorrhage.

The above directions equally apply to recent wounds in other situations, where blood is spouting out from an open artery, provided you can make sufficient pressure with your finger on the artery against the bone below, to obliterate for the time its cavity either at its wounded orifice or above it. But if the blood proceed from an artery that is deep seated in soft and fleshy parts, where there is no bone or other sufficiently hard substance behind the wounded artery to afford the requisite resistance to your pressure, as in the calf of the leg, the fleshy part of the thigh, or buttock, or in the belly, your first consideration must be, whether pressure can be applied to the main trunk of the artery by a tourniquet; which may always be done, be it remembered, in wounds on the extremities situated below the groin, or the arm-pit; and if not, you must be content to resort to tents, or pledgets, or dossils, carefully introduced into the wound, and retained there by firm pressure of the hand, till surgical assistance shall arrive. Nothing is better for this purpose than small pieces of sponge introduced one upon another, but, if this be not at hand, felt scraped from an old hat, lint scraped from linen, or even chewed paper, which may in every situation be easily obtained, will answer very well.

I may here observe, that very little credit is given by surgeons now-a-days to the styptic quali-

ties of various lotions, salves, or other applications, which have been highly vaunted in their day, and will still be extolled and pressed upon your attention by the credulous and by the Lady Bountiful of your village. Surgeons now rely wholly on mechanical pressure, or on the division, or the tying up, of the artery. These latter are surgical operations of some nicety, and should therefore be left to the surgeon himself; and you must rest satisfied, in such cases as require them, with having temporarily checked the bleeding, and thus perhaps saved the life of your neighbour when in great jeopardy.

Hemorrhage sometimes unexpectedly takes place some hours after the amputation of a limb, or other *surgical operation*; and if this should occur in the absence of the surgeon or his assistant, your aid may be called for. You may have been present at the operation, and such attendance on the part of the clergyman, I can assure you from experience, is a great comfort to the patient, and is always acceptable to a liberal surgeon, and you may in this case have received his particular instructions how to act upon such an emergency. If not, and if the case be one of amputation of an extremity, in all probability a tourniquet is already in its proper place, and you have only to tighten the ligature by turning the screw. But if the hemorrhage occurs after the amputation of the breast, or the removal of a tumour in any other part, where a tourniquet

cannot be applied, uniform pressure with the hand over the dressings will usually suffice, and must be perseveringly applied for many hours, one assistant occasionally relieving another. This you must now have recourse to, and make arrangements for its continuance, until the surgeon shall arrive, who will, in all probability, deem it expedient to remove the dressings, expose the surface of the wound afresh, and tie the bleeding artery. I may conclude this part of my subject by observing, that precisely the same management is called for in hemorrhage after these and similar operations, as to that after accidental wounds.

Bleeding from the socket, after *extraction of a tooth*, is often troublesome, sometimes dangerous, and has occasionally proved fatal. In these cases pressure is to be resorted to first, by introducing a very small dossil of lint by means of a probe into the hollow of the socket, and holding it firmly in its place by the same instrument, until a second be introduced above it, and then a third, and a fourth in the same manner, so as to bring the dossils upon a level with the surface of the gum, when a firm compress larger than the former may be applied, and retained in its place by the patient's own finger, or by his firmly closing his jaws and thus pressing the dossils down to the bottom of the socket. Owing to the orifice of the bleeding vessel in these cases being encased in bone, this pressure proves frequently insufficient, and the blood continues to ooze or

trickle out through all the folds of lint. Our next resource is the introduction into the socket of some escharotic or caustic, in hopes of its reaching the mouth of the wounded vessel, and by destruction of its coats forming an eschar, which will mechanically plug up the wound. For this purpose the former dossils of lint having been removed, fresh ones must be similarly introduced, the first of which may be dipped in oil of vitriol, aquafortis, or a strong solution of lunar caustic, and applied with care by means of forceps, so as not to touch any other part. Over this other dossils of dry lint must be introduced, as just now directed, with a view of combining pressure with the escharotic treatment. Should this also fail, the surgeon, who will of course have been summoned as soon as the patient had shown symptoms of exhaustion from the loss of blood, will, in all probability, proceed to the application of the actual cautery.

Generally speaking, the bleeding is to be encouraged after the application of *leeches*; and the number of bloody cloths, or the quantity of bloody water in which the sponges have been washed, though sometimes they may excite alarm in the timid, are to be considered by you as no criterion by which to judge of impending danger. When, however, the bleeding has continued as long as the medical adviser has deemed sufficient, the removal of sponges, fomentations, or poultices, by which the bleeding has been encouraged, will of itself in

general prove sufficient to stop the bleeding, or a small dossil of lint over each bleeding orifice, and a compress of rag over all, will in nineteen cases out of twenty be all that is required. I have, however, known some instances of great danger from the long-continued bleeding from leech-bites in very young children, and which, let me impress it strongly on your mind, always bespeaks either want of thought, or want of judgment in the attendants; for nothing is so easy of application in these cases, and nothing so efficacious as pressure: no pressure can be so firm, so evenly, or so easily persisted in, as pressure with the fingers; and however numerous the orifices, there can seldom be difficulty in finding the point of a finger for each, nor can there be much hardship in continuing this pressure for hours together if required. I have sometimes known dossils of lint, then scraped felt from a hat, then the byssus septica, a dark brown soft felt-looking substance growing in damp cellars, then flour, starch, compress upon compress of lint or rag, sponges, and cloths, all in requisition, and the oozing of blood still continuing, till the poor little babe has grown pallid and cold, has begun to yawn, and has indeed been brought into extreme danger, where a little presence of mind leading to the pressure by the fingers as above described, would have obviated all danger and prevented all alarm.

Should you at any time be called to a case of profuse hemorrhage from an *old wound* or ulcer,

as often happens in cancer and scrofula, you may feel certain that it has occurred in consequence of the ulceration of the coats, and of course the rupture of an artery. You will in all such cases apply for surgical assistance, and in the mean time have recourse to the tourniquet or to pressure, as the particular case may require, according to the instructions already given.

Were I now to draw my observations on hemorrhage to a close, you would perhaps exclaim, that I had neglected to inform you what was the proper application to the bleeding surface of a slight cut, as of the finger with a knife, or of the chin with a razor, the commonest of all accidents, and the latter, one that is often troublesome and annoying, particularly in a well-fed chin, from its pertinacity in bleeding, and doubly so when the breakfast-bell, or mayhap the dinner-bell, has already rung. Your inquiry will be, What will best stop the bleeding? and here again my answer is, pressure. In treating of wounds I told you to bring the edges of the wound into close contact, and to retain them there by adhesive plaster, or bandages, or both. Pressure by the same means, in bleeding wounds of the trifling character we are now alluding to, will be all that is requisite to stop the bleeding; and here let me decry the common practice of first washing the wound with vinegar, or brandy, or with any celebrated styptic, as an unnecessary infliction of pain. Neither have I the least faith in the boasted

efficacy of the newly-invented *wound-stone*. Wipe away the blood, exclude the air as speedily as you can by closing the wound, apply your adhesive straps and your bandage, and leave the rest to nature.

For the careless shaver I advise first of all pressure with the finger, and, when the continuance of this becomes inconvenient, the application of the byssus septica, or a morsel of lint, or scraped felt, which may in a few minutes be removed for the more comely substitute of court-plaster. The byssus septica, mentioned once before, as well as in this place, is a dark grey, or sometimes black, fibrous matted vegetable production, growing on the casks, or the walls, or the ceilings of dark and damp cellars. When old it is very closely matted, and yet sufficiently porous to prove an excellent stauncher of the blood. This substance, however, as well as the others here mentioned, I may observe, possess no other styptic quality, than what is attributable to their mechanical texture, which fits them for retaining the blood till it coagulates, and thus plugs up the orifices of the bleeding vessels with a force sufficient to overcome the propelling forces of the circulation in those minute branches of the arterial system.

A somewhat similar wound to that produced by the rough scraping of the chin with a blunt razor, is the common accident of grazing the shin, or any other part. Here also I recommend the lint, the

byssus, or the felt, if the bleeding be troublesome ; and the speedy exclusion of the air by the application of gold-beater's skin, court-plaster, or if you desire a little additional pain, the old-fashioned lily-leaf steeped in brandy.

I shall now conclude this long epistle on hemorrhage by an observation or two on the treatment of persons, who have fainted from loss of blood. I have, in a former part of this letter, told you that fainting sometimes proves a most fortunate circumstance, and is even to be encouraged, as an effectual means of checking or suspending the flow of blood, and thus allowing time for the surgeon's ulterior proceedings. Under these circumstances the patient should be placed in the horizontal posture ; and, supposing that the surgeon will very speedily have secured his object, no other means of resuscitation need be resorted to. When, however, by tourniquet, or other means, your patient is secured from danger, or when, in cases of swooning after venesection, you have tied up the arm, or whenever, from its long continuance, you deem it advisable to use other means than the horizontal position for the resuscitation of your patient, nothing is more frequently or more speedily effectual, than the dashing a wine-glassful or more of cold water into the patient's face. A tea-spoonful of sal-volatile or hartshorn, may be given to the patient in a little cold water, when he is able to swallow, and the same, or other volatile pungent substances,

as burnt feathers, snuff, &c., may be held to the nose; and I may here mention, that in a very long protracted case of fainting, not indeed from hemorrhage, but from the effect of a thunder-storm on a delicate lady, I witnessed almost instant relief from the application of mustard to the soles of the feet, after all the usual means had been tried in vain.

LETTER IV.

ON SCALDS AND BURNS.

MY DEAR SON,

IN common parlance, and in many surgical works too, the words scald and burn are used sometimes synonymously, and all such accidents are then treated collectively under one head; or when these terms are applied distinctively to different kinds of injury, each term is not always used in the same sense by different persons. In a popular work like this, where the subject will be illustrated by detailing the different kinds of accidents, I think there will be some advantage in dividing the subject, and in treating of scalds and burns separately. I shall, therefore, now specify precisely the distinction between the terms which I shall uniformly and invariably adopt in the present letter, not however without premising that the definitions are somewhat arbitrary, and cannot, therefore, be expected to

meet the preconceived notions of all readers, as to the proper acceptation of the terms.

By *scalds*, then, I mean injuries inflicted on the living body by heated water, oil, spirits, or other matter, which, at the usual temperature of the atmosphere, exists in a fluid state. This term, therefore, you perceive, is applicable to injuries from steam or vapour, as well as fluids. By the term *burn* I shall designate all injuries sustained by the living body from any inflammable substance in a state of ignition, as from burning coal, or burning oil, or ignited firedamp or other gas; also from heated substances not in a state of ignition, which at the ordinary temperature of the atmosphere are in a solid form, as heated stones, metals, glass, &c., whether these substances be in a state of fusion, or in their natural state of solidity.

The substances above enumerated are most of them in common use, and therefore become the ordinary sources of this description of accident. I cannot, I think, treat the subject after a better method than by dividing these accidents into scalds and burns, and illustrating each class by some of the most common kinds of accident, to which you are likely to be called.

First then of SCALDS. It is not necessary that the water, or other fluid, should be at the boiling temperature, to produce the injury denominated scald, for water at two hundred degrees of heat,

or considerably lower, will produce the mischief, if applied to a very sensitive part of the skin, and retained some time in contact; whereas the boiling heat of water, you know, is two hundred and twelve. Generally speaking, the hotter the water the severer will be the injury sustained, or, to speak more correctly, the mischief will be in proportion to the degree of heat, the length of time during which it is applied, the extent of surface, and sensibility of the part. Thus boiling water will, *cæteris paribus*, inflict a severer injury than water heated only to 200°, and boiling oil, which is hotter by several degrees than boiling water, will produce more mischief still. Again, boiling water poured over a person's naked leg or foot will not inflict so severe a scald, as if the same part were immersed in the boiling water, or as if the water were retained some time in contact with the skin through the intervention of the stocking; the contact in the former case being momentary. In the case of immersion too the mischief will be the greater the longer the limb remains in the scalding liquor. It also stands to reason that the whole or greater portion of the body being immersed in scalding water, as when a person falls into a copper, which is not an unfrequent accident, the shock to the constitution and consequent danger is greatly increased by the vast extent of surface necessarily exposed and injured. Again, the application of a boiling fluid to the

trunk of the body is more injurious than to the hand ; to the lips mouth and throat, than to the external surface of the body, in consequence of the greater sensibility of those parts ; which circumstance will account for the severe mischief and sometimes speedy death, when a child incautiously drinks scalding tea or water from the spout of a teapot. And further, with regard to the influence of the sensibility of the part in determining the magnitude of the mischief, it has been pointed out by Sir James Earle that some persons, from peculiarity of constitution, or from a local morbid state of nerve, may be less able to resist the effects of high temperature, and consequently may suffer greatly more than others from scalds or burns.

A scald may be so slight as to occasion only a little pain and redness, and these effects may speedily pass away. In such, and even severer cases, where the cuticle or scarf-skin is not raised into a blister, or the true skin injured, the application of cold relieves the smarting, and the immersion of the part in cold water, or its free application by sponge or wet cloths, is all that will be required.

The effects of a scald somewhat more severe, but still moderate, are greater pain, more lasting redness, and the rising in a few minutes of a bleb or blister. Such often arises from hot water, perhaps below the boiling point, being accidentally

poured over a foot, or leg, or some other part. In these cases cold again is the chief remedy. Immerse the limb in cold water, apply ice to the part if at hand, or cloths constantly kept wet with cold water, to which, if the skin be not abraded, some neutral salt may be added to increase the degree of cold, as common salt, or saltpetre, or sal ammoniac; or with a view of producing a far colder fluid, add to the water, from time to time, a small quantity of the combination of salts, called the freezing powder. Some persons prefer wetting the scalded part with spirits of wine, and this, evaporating more speedily than water, produces more cold, and is therefore an excellent remedy, when the skin is not already denuded, and where expense is not an object.

I may here describe a very simple mode of applying the property of the syphon, and our knowledge of capillary attraction, to the comfort and advantage of a patient, who, from an accident, such as we are now describing, or from ordinary inflammation of a part, or other malady, requires the continued free application of lotions or embrocations. It consists in introducing threads, few or many, from a single thread to a skein of worsted, into a bottle filled with cold water or the required lotion, with one end of the thread or skein hanging from the mouth of the bottle, and then properly suspending the bottle over the affected limb, or other part requiring the application. For general purposes, the quantity of worsted should be about

the thickness of the little finger. A little ingenuity will devise the most commodious method of suspending the bottle according to the position and situation of the patient, and of the part upon which the fluid is required to be dropping. If the patient be in bed, the bottle may be suspended from one of the curtain-rods, or from a cord, or lath of wood, or a long stick laid across the bed from one curtain-rod to another. If the patient be on a sofa, or in his chair, the bottle may easily be contrived to be suspended by a stick laid across and fastened to the back of two chairs, or the back of one chair and the sofa. These are schemes to be adopted on the spur of the moment; but the most convenient contrivance of all is a stand, made for the purpose, with a projecting arm, to any part of which the bottle may be suspended, and this arm may be made to rise and fall, and be fastened with a screw, as in the construction of ordinary pole-fire-screens. To make use of this contrivance, all that is required is to suspend the bottle directly over the part which is to be subjected to the application of cold, and to draw the end of the worsted sufficiently out of the mouth of the bottle, so that it be somewhat lower than the surface of the fluid in the bottle. Or the general direction may be that the worsted touch the bottom on the inside, and be drawn below the bottom on the outside. This latter portion of the worsted represents the longer leg of a syphon, and the fine threads, of

which the skein consists, raising the fluid by capillary attraction, there will be a constant dropping from the end of the worsted upon the affected part, as long as any fluid remains in the bottle. To cause an uniform distribution of the lotion over the part to be cooled, and a more extensive surface for evaporation, the scalded or inflamed part should be lightly covered with a single fold of fine cloth.

In some cases the application of cold is more conveniently effected by means of poultices, or cataplasms, in which case nothing answers better than scraped potatoe, or carrot. Such poultices must be renewed as often as the burning pain, which the application of them instantly relieves, shall have returned; of this, therefore, the patient will be the best judge, and his feelings must direct you; or if the removal of the poultice and consequent exposure to the air, aggravate the smarting, it may be kept cold by frequent application of cold water without removal. The same observation, as to the feelings of the patient, applies also to the renewal of cold water, or wet cloths used in the ordinary way.

We have hitherto been considering only cases of trifling severity; but the scald may of course be of every grade from these to the appalling cases, which we are sometimes called to witness, of a person's falling into a copper of boiling water, beer, or tallow, where, from the extent of surface injured, and consequent shock to the whole nervous system,

the patient dies after a few hours, sometimes of indescribable suffering, at other times of stupor approaching to insensibility.

In cases of moderate severity, where blisters soon arise, my advice to you is this, that if the blisters be small, you leave them to their natural progress ; and that if so large, as by their bulk or situation to be liable to friction, and thus or by distension to be the source of additional pain, then you are to prick them with a needle, so as to empty them without exposing the inflamed and tender subjacent skin to the contact of the air, or of the medicated applications. In accidents of the degree of severity we are now contemplating, after the continued application of cold, as long as the sensation of burning, such as it was at the commencement of the accident, shall continue, which will vary from two or three to twenty-four hours, you may substitute the lime liniment, or lime-water and milk, gently applied, first by means of a feather, and then by covering the parts with rags well soaked in the same. When the injury sustained is on a part of the body covered by the dress, it is a common but mistaken practice to proceed immediately to strip off the clothes, in doing which it is not unusual to strip off also the cuticle, which, by exposing the tender true skin to the air, greatly aggravates the sufferings of the patient. But in such cases the parts should be instantly submitted to the cooling process ; and this, even if it extend to the whole surface of the

body, as when a person falls into a copper of boiling fluid. In this latter case, however, as well as in scalds occupying any considerable portion of the trunk, the immersion in cold water must be continued but for a few minutes, lest its effect upon the general constitution should induce internal inflammation, particularly of the lungs; to which persons are greatly more liable after accidents implicating so much of the cuticular surface. When, however, a limb is the seat of the scald, the immersion, or other application of cold, may be persisted in for some hours, and then the clothes should be taken off, or cut away, with the greatest tenderness, and with all due care to avoid exposure to the air. Indeed through the whole treatment such exposure must be avoided as much as possible; when, therefore, the lime-liniment, or other dressing, in the severer cases, is substituted for the cold applications, apply the rags imbued with these matters smoothly and closely to the injured surface, and renew them but seldom.

In *very severe* cases, after the application of cold as above described, you will do well to apply, first, rags dipped in oil of turpentine, and over these, in the most injured parts, pledgets of lint covered with oil of turpentine and yellow basilicon, mixed in equal proportions, and, where it can be effected, bandages over these, to keep all firmly in their places; and if upon the subsidence of the inflammation, and the separation of the cu-

ticles, the parts are deeply ulcerated, common poultices will be serviceable to promote the separation of the slough, and the surgeon will find stimulating applications called for in the progress of the cure, as blue vitriol or the solution of lunar caustic ; but, as in such severe cases your judgment will only be required to direct the early treatment, I need not discuss these points.

We will now suppose, that you are called to a child, who has inadvertently sucked the steam, or some of the fluid, from the spout of a tea-kettle or tea-pot, which, as I formerly stated, is not a very rare occurrence. The child is, in all probability, about two or three years old ; and, when you arrive, you find it screaming and crying violently, and as you can obtain but a slight view, if any, of the back part of the mouth and throat, the only injury you can discover is a dull white and wrinkled appearance of the delicate cuticle covering the outside, and lining the inside of the lips. If, however, the screams have continued long, and particularly if any witness of the accident assures you that the water was nearly boiling hot, you may feel assured that the mischief is considerable ; and you may proceed immediately to assuage its sufferings by a dose of laudanum, proportioned to its age. If it be an infant under a year old, give two drops, and if older, give an additional drop for every half year of the child's age. Give the laudanum in a teaspoonful or two of cold water, putting the spoon as

far back into the child's mouth as possible. The only local treatment that can be resorted to in such cases, is to smear the lips and inside of the mouth with sweet oil, or cream, by means of a soft feather, or camel-hair brush; to drop a little cold water frequently into the mouth from a sponge or wet rag, or, if the child seems to prefer it, you may allow it to suck a piece of ice, or a camel-hair-brush repeatedly dipped in cold water. If in a few hours the crying becomes hoarse, and the child's sufferings do not much abate, you may suspect incipient inflammation in the gullet, and perhaps in the windpipe from the heated steam that entered the air passages, and you will do well to apply two or three or more leeches to the external throat, according to the age and strength of the little patient. The dose of laudanum may be repeated about the same time, and the after treatment will be best directed by a medical practitioner.

The severity of the injury in other cases may in a great degree be judged of by the effects of it upon the general system. If immediately after the accident, and previously to the application of cold to the injured part, the patient is seized with shivering, you may consider the case as one fraught with danger, and to obviate as much as possible the evil consequences of this constitutional disturbance, you may instantly, in the absence of professional aid, administer a full dose of laudanum in hot brandy and water; if the patient be an

adult you may give sixty drops of laudanum with half a wine-glassful of brandy in about a quarter of a pint of hot water; you will also be careful not to expose the patient to the cold unnecessarily, and instead of the continued immersion of the injured parts in cold water, or the free application of cold in any other way, consider this, if left to your own judgment, as one of those severe cases which require the early application of oil of turpentine.

The dose of laudanum, and also the quantity of brandy, in such a case, must of course vary with the age, and constitution, and previous habits of the patient. To a youth of about fifteen, or to a delicate female, half the above dose would be ample, and to a child of five years you should give only ten drops of laudanum and about two tea-spoonfuls of brandy. Should the shivering or sensation of chilliness and the depressed state of pulse not abate in a very few minutes, more brandy may be given by only a single tea-spoonful at a time even to an adult, with a desire that he hold it as long as he can in his mouth before swallowing it; as, when thus given, I believe its effect to be more speedily and universally diffused. If the sufferings of the patient be not materially mitigated after a few hours, it may be advisable to repeat the laudanum; but by this time it is to be hoped that you will have resigned so formidable a case into the surgeon's hands.

In cases of less danger, which may be supposed

to be left to your own superintendence, I may here observe, that a moderate dose of salts should be early administered, and occasionally repeated during the progress of the cure; that the diet should be light; and that as little confinement to the bed or to the house be insisted upon as the situation and extent of the injury will allow, because so material an alteration in the habits of your patient would be likely to induce disease.

BURNS, which will now become the subject of consideration, I have above defined to be injuries inflicted on the living body by ignited or burning bodies, by solids heated to a high temperature, or by such substances in a state of fusion as are ordinarily solid at the common temperature of the air. These injuries so much resemble in their effects the scalds of which we have just been treating, that much of the same reasoning will apply, and much the same treatment will be applicable; but still as there are some peculiarities in burns, and as the nature of the accidents, by which the injuries are inflicted, are so different, I have preferred considering the subject separately, as affording a more easy and natural introduction of the various accidents, in which you are more peculiarly liable to be called upon to act, and to give your advice.

I shall begin with an accident of very frequent occurrence, particularly amongst the children of the poor, who are so often, either from negligence or from necessity, left to themselves in apartments

where there are fires or lighted candles, but particularly the former. I here allude, of course, to the burns occasioned by the clothes catching fire. The instructions which I would inculcate upon the first witnesses of such accidents, and upon the sufferers themselves when old enough to comprehend them, are to exclude the access of air, and particularly of draughts of air, as much as possible; to apply water or damp coverings for the purpose of extinguishing the fire; and thirdly, to remove, as expeditiously as can be done without encouraging the flame, all the ignited articles of dress. Thus, instead of running to the door or out of doors, which fans the flame and extends the injury tenfold, keep the doors and windows shut, and let your first efforts be to wrap up the sufferer in something sufficiently large and thick, to cover and exclude from the air all the ignited portions of the dress, as a great coat, a blanket, or a carpet; unless, as is sometimes the case, the article of dress which is in flames can be *instantly* torn off, which may be done if it be a cap, a handkerchief, or a child's pinafore; but do not run the risk of prolonging the mischief by attempting in the first place to undress the sufferer. I have seen an instance of very serious aggravation of the injury from fruitless attempts to strip off the trousers from a youth, who had the misfortune to have fire-works set fire to, which he carried in his trouser pockets. Had he courageously introduced his hand and thrown out the fire-works, ignited or not

ignited, and had one of the numerous witnesses wrapped a great coat closely round the burning clothes, whilst another with water, which was nigh at hand, had presently soaked it well, the young gentleman's life would not have been endangered, and he would have been saved many weeks of acute pain and suffering.

When the air has been by these means excluded sufficiently long to satisfy you that the fire is extinguished, proceed to cut and strip off carefully all the clothes, and adopt the curative means which I shall now describe generally, as applicable to all burns, whether inflicted by the dress catching fire, or by the immediate application to the skin of flame, burning coals, melted metals, or other highly heated substances.

The mischief produced by burns, generally speaking, penetrates deeper, and more frequently destroys the skin, and seriously injures the subjacent parts, than that produced by scalds. These accidents consequently require more frequently the stimulating applications after the first few hours, as rags dipped in warm oil of turpentine, or the liniment made of turpentine and basilicon; and in cases only moderately severe these dressings may be substituted for the cold applications more early than in scalds. Still, however, in very mild cases, as the momentary handling of hot metals, the dropping of melted wax upon the fingers, a common accident in the sealing of letters, and the fall-

ing of other melted or burning bodies on the surface, and which remain there but for a moment, cold water and cold poultices will be the most agreeable and efficacious applications, and nothing more will be required.

In severer cases, there is much discrepancy in the directions given by different surgeons; some, as Kentish, advising the immediate adoption of warm oil of turpentine, others preferring in all cases the application of cold, and others, falling in with the intermediate plan recommended by Cleg-horn, using warm vinegar as a first application.

From experiments that have been frequently made with a view to decide the controversy, it is evident that each mode has in many cases proved equally successful, but that in some one plan has had its advantages, and in other cases a different treatment has succeeded best. Unfortunately for our patients surgeons have not yet been able to appreciate the causes of these different results, and therefore cannot say *à priori* what remedy is to be preferred in any particular case. In this dilemma my advice is, that in every case you commence the treatment with cold applications, as being always most easy of access, and as they may indeed be *instantly* had recourse to, by immersing the limb in cold water, or by the free application of wet cloths. This may be done, as was recommended in scalds, even before the injured part be stripped of its clothing, and when, after an hour or more, you

proceed to remove the clothes, which must be done carefully, with a view to ascertain the extent of the injury, and for the application of other dressings, it may by proper management be done without desisting for a moment from the cold applications.

In very mild cases you cannot do better than persist in the use of cold water or ice, and then cold cataplasms of potatoe or carrot very frequently wetted or renewed, but in the latter case without removing the single fold of linen which should always be interposed between the poultice and the skin, and retained there, to prevent the immediate contact of the air with the denuded skin.

In severer cases, as from the clothes catching fire, the explosion of gunpowder or fire-damp, or the continued contact of ignited or melted bodies, after the immediate application of cold, the conveyance of the patient to his home, the removal of his clothes, and the comfortable arrangement of his bed, his couch, or chair, as the case may be, you may proceed to try by actual experiment in the particular case in hand, what kind of treatment should be permanently persisted in, at least until the arrival of a surgeon. I shall suppose that you have by this time procured oil of turpentine and the lime-water liniment. Where the extent of surface injured is but small, you may now substitute either of these for the cold applications hitherto employed; a very short time will suffice for the experiment, and the sensations of the patient alone

must decide; for no doubt seems to be entertained by professional men, that in the early treatment of burns and scalds, that application is to be preferred, which most effectually allays the acute burning sensation in the injured part. Should the patient express no preference after the first change, substitute the other, and after about an hour's trial, ultimately persist in that which he prefers. Should the injury extend over many parts or a large extent of surface, the cold poultice, the lime liniment, and the warm turpentine may be applied each to a different part at one and the same time, and after an hour or two's trial, that most approved by the patient may be substituted for the rest.

The only observations I can offer to guide you in these experiments are these. First, that the application which relieves most at the first instant of its use sometimes loses its cooling or soothing effect so speedily, that the frequent renewal counterbalances this advantage; thus, rags soaked in the warm oil of turpentine soothe often for an hour or two, whereas the cold water or lime liniment may afford somewhat more relief, but only for the first few minutes, and must therefore be continually renewed. A second observation to guide you is this, that the turpentine has been found to be more frequently soothing in burns than in scalds, and the cold water more so in scalds than in burns; and, thirdly, I may observe that as the frequent renewal of the dressings, by some exposure to the air, which

can scarcely be avoided, and by other circumstances, gives more pain where the cuticle is removed, it follows that in these cases the turpentine or the liniment, as evaporating more slowly and consequently not becoming so soon dry, are preferable to the water or cold lotion.

With a view of obviating as much as possible the pain thus occasioned by exposure of the sores to the air, it is desirable, not only in the early part of the treatment, but still more so after the separation of the cuticle and of the skin, if the injury has extended thus deep, that the rags, whether soaked in water, or lime liniment, or turpentine, and the pledgets of turpentine and basilicon, if these be used, should be in narrow slips; so that by taking off and renewing them separately, a small surface only need be exposed at once, and the part may be more expeditiously re-covered. When the cold applications are preferred, the surface need not be frequently exposed, whatever be their form; as the water, the snow, the ice, or the scraped potatoe may, and always ought, to be employed with an intervening fold of linen rag, which need never be removed from the injured surface, though the renewal of the cold application itself cannot well be too frequent, as the burning sensation, which it is intended to allay, usually returns the moment the cloths have acquired but a small increase of temperature. On this account the use of snow or ice in a half-filled

bladder, should always be preferred where practicable.

When the preference is given to the lime liniment, it is to be used as described in the treatment of mild cases of scald. When oil of turpentine is preferred, pour the oil into a basin, and place this basin in a larger one of boiling-hot water ; and then soak narrow slips of rag in the oil thus heated, and apply them separately and smoothly over the burnt surface, so as to cover every part. And where pledgets of the turpentine liniment are used, they need not be removed for two or three days.

Injuries from the accidental explosion of gunpowder also afford pretty frequent examples of burn, particularly with schoolboys. These may be of every degree of severity, and the mischief is often aggravated by suffering the burning clothes to remain longer than need be in contact with the skin, and without an attempt at extinguishing the fire by wrapping the parts in some damp covering, as directed above. There is nothing peculiar in the treatment of this species of burn ; I have therefore only to refer you to my former instructions, and to leave you to apply them according to the severity of the case. I may, however, observe that so violent is the force of exploding gunpowder, that burns from this cause are frequently combined with other serious mischief, as a fracture of a bone, the loss of an eye, or a concussion of the brain, in all

which cases, you will of course be speedily superseded by the practised surgeon.

We have hitherto been considering principally the treatment applicable only upon the first occurrence of the accidents, or at most such as may be persevered in for the first few hours, or for the first day or two, or until surgical assistance shall have arrived. But should the case, from its being deemed unimportant or for any other good reason, be continued under your unassisted care, I must caution you against persevering too long in the use of cold applications; for, as I formerly observed, when treating of wounds, nature cannot repair the injuries sustained in these cases without setting up the process of inflammation in the sound parts immediately in contact with the parts destroyed, and this will certainly be retarded, or altogether prevented, by too free and too long an application of cold.

In deciding upon the proper point of time for substituting warmer and more stimulating dressings, the feelings of the patient will greatly aid us. The pain occasioned by a burn or a scald, whether mild or severe, is of a *peculiar* kind, as every one's experience must have taught him. It is described as a burning pain, and as long as this remains, it is a very common expression to say that the fire is not yet out. As long as this peculiar pain is complained of by the patient, the cold applications, if they have in the first instance been preferred, may

be persevered in. It may also be here observed, that in feeble and delicate constitutions the free and long-continued application of cold is more objectionable than in the robust.

In the after-treatment of burns of moderate severity, slips of rag well moistened with the lime liniment, or with a mixture of lime-water and milk, will perhaps have proved the most serviceable dressing; if so, let them be renewed with as little exposure to the air as possible once a day, or oftener if the comfort it affords to the patient makes him wish for it.

When the blebs or blisters are numerous, and the surface of the injured part is consequently moist, fine flour or very finely powdered chalk sprinkled freely over the surface is a mode of treatment recommended by some authors, and if the lime liniment produces smarting, this may be tried in such cases, and should be washed off with warm water, and renewed once only in the day.

In all severer cases where the true skin is destroyed, and perhaps the flesh or even the bones, as I have seen them in cases of epileptic patients who have fallen into the fire, the best applications will be rags dipped in the warm oil of turpentine, and over these pledgets of lint spread with a mixture of the oil of turpentine and yellow basilicon or yellow wax in equal proportions. I mean to say that these will be the best dressings after the first few hours; for even in these cases, as I have

before observed, the cold applications will generally afford the most relief at first; though they should not, in my apprehension, be so long persevered in here as in milder cases.

During the further progress of the cure in all cases of severe burn, whatever be the nature of the accident, some variety of treatment will be required according to the established rules of surgery. If the granulations are too high, or appear soft and spongy, or if, as it is commonly expressed, there is proud flesh, its surface must be touched with lunar caustic or blue vitriol; if abscesses are formed they must be opened, and sinuses must be dilated, and when the sloughs or dead parts have separated, and the healing has commenced, straps of adhesive plaster, wherever applicable, will expedite the cure.

With one or two more observations of general application I shall conclude the subject of local treatment. It was observed in treating of wounds, that whenever two cut surfaces are brought into apposition, they will unite, and grow together, a law of the animal economy that is frequently taken advantage of in surgical operations. The same law holds good of any two surfaces denuded of their skin by such accidents as we have been now treating of; and when the healing process commences after a scald or a burn, the greatest care is often necessary to prevent the adhesion of parts together, which would occasion much future inconvenience.

This is of course most apt to occur between the fingers or the toes, or where there are folds or duplicatures of the skin, as in the groins, the arm-pit, under the chin, or about the eyelids; and many such cases (occurring, be it remembered always, from inattention) have occasioned considerable deformities, and have required serious operations afterwards for their removal, and not always attended with success. The certain means of obviating such accidents are the careful interposition of your plasters, or other dressings, between the healing surfaces, and this of course ought never to be neglected.

Another species of deformity arises from the contraction of neighbouring parts during the healing of such wounds, or sometimes even after the cicatrix is formed by the entire healing of the sore. The force with which this gradual contraction takes place, is sometimes so great, that the forearm has been drawn up close to the arm, and the elbow joint rendered stiff; or the chin has been drawn down upon the breast. To obviate such serious evils, whenever extensive and deep burns occur in these or similar situations, splints or such other mechanical contrivances, as the experienced surgeon shall recommend, must be worn during the whole progress of the cure, and for some time afterwards.

The general or constitutional treatment is so precisely the same after a burn as after a scald, that I shall refer you to what I have said in the

former part of this letter upon that subject; only observing here, that as deep-seated burns are of more common occurrence than deep-seated scalds, and therefore profuse and long-continued discharge of matter a more frequent result, so you will oftener be called upon to support the strength of your patient by nutritious invigorating diet, aided by the use of bark and other tonics.

The observations, which I have been induced to make on the treatment of scalds and burns, having been desultory, and, from the discordance of surgeons, not always very precise, I shall now briefly recapitulate those points of treatment, which may serve best to direct you in actual practice.

In every case of burn, if present at the time of the accident, damp the fire, if the clothes be burning, by wrapping the sufferer in a great-coat, blanket, carpet, or anything else that is at hand; and then carefully strip off the clothes: but in scalds do not strip off the clothes till after the temporary application of cold, lest you should in doing so strip off the skin also, but let your first object be to immerse the part in cold water. In all cases both of burns and scalds fly first to cold applications—cold water, ice, snow, scraped potatoes, or carrot. In mild cases nothing more may be required. In severer cases, after a few hours, the patient having been stripped, and put to bed, apply slips of rag, soaked or well spread with lime liniment, smoothly over every part, and renew the

dressing three or four times a day. But in still severer cases, where for instance the skin is destroyed, make use of the oil of turpentine, applying first slips of rag soaked in the heated oil, and over these pledgets spread with the turpentine liniment, and do not remove the dressings for two or three days. And here let me observe, that it will frequently happen that you will have in the same case burns of different degrees of severity in different parts, and that therefore you will find it of advantage, after the first general application of cold, to use at the same time cold poultice or lotion to a superficial burn upon the face, we will say, lime liniment to a severe burn upon an arm, and the turpentine to a deeper burn upon the trunk. When blisters rise, it is better not to break them, unless they are so large as by their bulk to be sources of additional suffering. In applying your various dressings, attend particularly to the interposition of your plasters between the fingers, or toes, in the bendings of the forearm, or ham, and in all natural foldings of the skin, with a view of preventing preternatural adhesions and contractions.

The general or constitutional treatment consists in moderate purging and moderately low living in all mild cases; and in the immediate administration of opiates and stimulants in severe cases attended with rigors or shiverings, and opiates alone where the pain is severe but unattended by shiver-

ing. As these severer cases advance, fever may arise, and require the usual treatment, and profuse discharge of matter may so exhaust the strength, that bark and other tonics, and a strengthening diet, may become necessary to support or restore his sinking powers.

LETTER V.

ON BRUISES, WHITLOWS, BED-SORES, SPRAINS, CONCUSSION, FRACTURES, AND DISLOCATIONS.

MY DEAR SON,

THE subject of the present letter is multifarious; but for reasons, which I shall now assign, the letter itself need not be proportionally long. Having already treated of most of those accidents which are important, and at the same time within the scope of that moderate amount of surgical lore which I aim at inculcating, I may, in strict accordance with the views which I have already stated, pass very briefly over most of the remaining topics in surgery. Very briefly, not on account of their want of importance, but, on the contrary, because they are too important to be allowed to be under other management than that of skilful and talented surgeons, even in their earliest stage of treatment. Of

this description of accidents are all fractures of bones and dislocations of joints, in which accidents my instructions will only embrace certain attentions to be paid to the present ease and comfort of the sufferers. The effects of concussion of the brain are likewise so serious as to make it incumbent upon you to send immediately in almost every case for professional aid. Let me, however, proceed to make such observations, as I may deem necessary and useful, on each species of accident, in the order which I have assumed as the title of this letter.

BRUISES are the consequence of a great variety of accidents, such as falls, blows, or severe pressure. Indeed they occur in some feeble constitutions from the slightest possible degree of pressure. The well-known external appearance that constitutes a bruise, arises from the extravasation of blood; that is, from the rupture of very minute blood-vessels, and consequent escape of blood into the cellular tissue in and under the skin. The gradual disappearance of a bruise takes place by the natural absorption of this extravasated blood by certain vessels, freely disposed throughout the animal frame, called, from their office, absorbents; and during this process of absorption the external appearance of the bruised part assumes a variety of hues, changing from its original purplish hue to a greenish, and then a yellow tint. The severity of this, as of most other accidents, may be of every grade; sometimes so slight as to demand no attention; at other

times, where the force occasioning it has been great, the bruise is extensive, deep-seated, and intensely painful; perhaps some important viscus is involved in the mischief, and dangerous or even fatal inflammation may ensue.

In every bruise, besides the rupture of vessels and extravasation of blood, which give it its characteristic appearance, the skin itself, and, if the violence has been great, the subjacent cellular substance, and muscular fibre, and nervous filaments, which everywhere abound in all these structures, have suffered. In the progress of the cure a certain degree of inflammation is set up in the sound vessels immediately contiguous to the injured parts, and according to the violence of the cause and extent of mischief done, must be the degree of inflammation and activity of the vessels in the surrounding parts, first for the purpose of removing by absorption the extravasated blood; in the next place, for separating and removing by the process of suppuration and absorption all dead parts; and lastly, for renovating them by new growths, as in wounds and ulcers of every other description.

When from a blow or fall there is an immediate swelling of the part, which indeed is often very considerable in a few minutes, particularly if the eye be the part injured, nothing is so successful, both in abating pain and reducing the swelling, as the free application of cold; and the

most efficacious mode of applying it is by means of a handful of snow or pounded ice (when it can be procured) wrapped up in a pocket handkerchief, and kept constantly to the part. When from neglect of the cold application in the first instance the swollen part has become very sore and stiff, fomentation of the part with warm water in the first instance affords most relief; and, after the pain has thus been in some measure subdued, cold vinegar, or some spirituous embrocation, frequently renewed, is found most efficacious in promoting the absorption of the extravasated fluids, and in thus restoring the natural size and colour of the part.

In severer cases much inflammation and consequent swelling often come on after one or two days in the parts immediately contiguous to the bruise; in such cases, after a few hours of cold applications, leeches, in number from two to twenty, according to the extent of inflammation to be apprehended, or rather now setting in, and according to the age and constitution of the patient, must be applied, and followed by the use of warm poultices for the first few hours, and cold spirituous embrocations afterwards.

In bruises of the finger by blows, or by squeezes, or pinching, which is by far the more frequent occurrence, the pain is usually intense at first, particularly if the nail be implicated in the mischief, and the most relief is experienced from immersion

of the part in warm water, and the application of warm poultices. In somewhat severer cases the nail ultimately falls off, and here poultices are the proper application during the shedding of the nail, and soap plaster spread on thick leather as a defence to the part during the growth of the new nail. In other cases, the periosteum, or fine membranous covering of the bone, becomes inflamed, and in the progress of the treatment deep incisions become necessary; such cases must be referred to the surgeon; and *à fortiori* all cases of bruise combined with fracture of the bone.

In some of these cases of bruises on the fingers the sheaths of the tendons become the seat of inflammation, and one species of *whitlow* is the consequence, which, as well as other kinds of whitlow arising spontaneously, requires leeching, fomentation, and poultices, and, what cannot be too strongly impressed upon the mind of both patient and surgeon, an *early free* incision down to, and through the inflamed sheath or membrane. This will of course be the business of the surgeon; but it becomes your duty in such cases to urge an early application to the surgeon, and to assure the patient, which you may do with the greatest confidence, that the relief from intense pain will be immediate, and the mitigation of after suffering immeasurably greater than from any other kind of practice whatever.

Another common accident to a finger, which may be mentioned as appropriately here as elsewhere, is the accidental confinement of a ring with so much tightness as to prevent the withdrawal of it by any ordinary means. This sometimes arises from some sudden swelling of the finger, at other times from slow and gradual growth of the finger in size, when the person has neglected to remove the ring for years. But the inconvenience arises more frequently from the person's own indiscretion in forcing on a ring that is too small, when the ineffectual attempts to withdraw it increase the evil by bringing on soreness and inflammatory swelling. In all these cases first try the effect of cold by immersing the hand in ice-cold water; if this does not alone reduce the swelling, hold the hand up so as to encourage the return of the venous blood, and at the same time apply cold by means of wet rag. If this also fails, make trial of the following ingenious device, which, I have lately been informed, very frequently proves successful. Wrap a piece of packthread closely and tightly round and round the finger, beginning at its extremity until you reach the ring, then insert the end of the string by means of a fine blunt bodkin or other such instrument under and through the ring, draw it tight, and then begin to untwist the string from around the finger, and you will gradually bring down the ring at the same time. When all these means fail, the ring must be filed off, as the conse-

quence of its retention will be ulceration, and perhaps mortification.

If, in very severe cases of bruise in soft parts, you apprehend that any portion of the skin be actually destroyed, that is, that the blood-vessels and nerves are so injured as not to be able to recover their healthy actions, you must promote the suppuration, which is nature's constant process for the removal of such parts, by warm fomentation and poultices; but of such severe cases I need say no more, as the surgeon ought assuredly to supersede you here again.

I shall take this opportunity of saying a few words on the subject of what professional men denominate *bed-sores*, as there is a strong analogy between them and the severe cases of bruise. When a patient is long confined in the horizontal posture in fever, or other acute disease, where the strength becomes so reduced that the poor sufferer is incapable of sustaining any other than the recumbent posture, it is not uncommon for some spot about the buttocks, or at the bottom of the back, to assume the appearance of a bruise; and, in consequence of the low state of the vital powers, the part soon dies, the subjacent cellular substance also sloughs, and frequently the most extensive bed-sore is the consequence. Long-continued pressure on the part may be considered as one of the exciting causes, and this constitutes the analogy between bed-sores and bruises; but I must proceed to ac-

quaint you with this important fact, that this consequence occurs but rarely, unless also, from unconsciousness in the patient, or unpardonable negligence in the attendants, or both combined, the part is allowed to be frequently, and to remain long, wet with the natural excretions of the body, which irritate the skin even when sound, but much more so when previously bruised or excoriated by continued pressure.

I have introduced this subject to put you upon the alert in directing the preventive means in every case of long-continued confinement to bed, and particularly where the patient, either from disease or from great age, is not at all, or but slightly, conscious of the calls of nature. Alteration in position or removal from one bed to another should be persevered in as long as practicable, frequent renewal of dry clothes, and, above all, sponging with warm water, and careful drying with soft linen afterwards, must never be omitted in such cases. As soon as any part of the skin is excoriated by the long-continued pressure, or if it only looks more red, and is become tender, you must defend the part by the application of diachylon or soap plaster spread on soft leather, and the plaster must always be sufficiently large to cover much more than the excoriated part, otherwise the edges of the plaster, by irritating the already tender skin, would increase the mischief. Remember this axiom, that almost every sore of the description now under consideration is the conse-

quence of neglect. Be vigilant, therefore, when in attendance upon the sick poor, where this is more likely to occur; neglect not to inquire frequently into these matters, urge the attendants continually to do their duty, and remonstrate where necessary.

When the mischief has occurred, poultices must be applied, and frequently renewed. Warm spirits of wine and camphor, or warm brandy sprinkled over the poultice, will excite the action of the vessels, and tend to check the further progress of the mischief. Some surgeons have extolled yeast poultices, or have recommended the grounds or lees of beer to be applied as poultices in such cases. Of whatever your poultice consist, it is of much moment that it be warm, and often renewed. If there is much fœtor, cover the part first with rag dipped in a solution of chloruret of lime, or of chloruret of sodium, and apply the poultice over this; when the sloughing has taken place, treat it as any other sore, always holding in mind, that the general debility requires a nutritious diet, and the irritation demands the occasional use of opiates, if the peculiarity of the attendant disease does not forbid their use.

SPRAIN is an altered condition of a muscle, a tendon, or the ligament of a joint, produced by violence, and rendering motion painful. Bruises, as we have just observed, are always the consequence of *external* violence, and show themselves by external marks, and may occur on any part of the surface of the body; sprains, on the contrary,

being generally the effects of undue or unnatural exertions of some of the muscles, may occur independently of external violence. They are also frequently unattended by outward marks of injury, and can only occur in the course of the muscles, and principally at the tendinous extremity of a muscle, or in the neighbourhood of a joint.

When a man slips in walking, or from any cause feels that he is losing his balance, he makes an unusual effort to recover himself, and in this effort he over-exerts some one or more muscles, and is said to receive a sprain; the part immediately, or very soon, becomes the seat of pain; it may be in the loins, or in one of the extremities; and this pain is considerably aggravated by an attempt at motion; and for a long time afterwards motion of the part will excite pain.

Again, a person in falling puts out his hand to save himself, and by the violent exertion of some of the muscles of the arm, or it may be by the jar or shock of the hand upon the ground, some of the muscles or their tendons about the wrist, the elbow, or the shoulders, are sprained; or the ligaments connected with any of these joints may be stretched or otherwise injured. The pain is sometimes immediately intense, at other times but slight at first, and very severe afterwards, although there may be no fracture or displacement of a bone, and not even the external appearance of a bruise.

If a person in running or jumping trips against a

stone, or alights on uneven ground; or, if when riding on horseback his horse stumbles, and he makes an unwonted effort of some of the muscles to preserve his balance, he experiences either immediately, or soon after the accident, considerable pain in the foot, the leg, the knee, the hip, or the loins, and will, perhaps, for a long time afterwards, feel painfully the effects of such a sprain.

In these accidents there is very frequently no external sign of injury at the time, and, if the mischief be but slight, there will frequently be none afterwards; but in other cases the usual appearances of a bruise will, in a day or two, be discernible, although there may have been no blow or external pressure; and in all cases of severity there will be more or less of swelling, and other symptoms of inflammation, particularly if the ligaments about a joint have partaken of the violence.

As the nature of the accidents which produce sprains are so various, so the nature of the injury sustained is not always the same. In a majority of cases, there is, in all probability, a rupture of some of the small muscular fibres, sometimes a rupture of a fasciculus of these fibres, or the whole of a small muscle, or of its tendon. The frequent concomitant appearance of a bruise is sufficient proof, that in these cases small blood-vessels are ruptured. The speedy swelling, which sometimes ensues, arises, in all probability, from the rupture

of lymphatics; and there is no reason to doubt, but that in other cases more deep-seated vessels, both sanguineous and lymphatic, are ruptured, when no corresponding appearances display themselves externally. The pain so constantly accompanying sprains, bespeaks the implication of nervous filaments in the original injury, and indeed the rupture of the smallest fasciculus of muscular fibres implies the rupture of the nerves and vessels which enter into its structure.

The *Treatment* of sprains may, for convenience, be divided into three heads, corresponding with three distinct stages in the progress of the case. Upon the immediate receipt of the injury, if the case be slight, rest and fomentation with warm water is all that is at first required; but in cases of greater severity, the rest must be absolute, and the application of leeches, as well as of fomentation, must immediately be had recourse to. The warmth may be preserved through the night by a large poultice, once or twice repeated; a smart purgative should be administered as early as can be done without the risk of disturbing the patient in the night-time, and the diet should be somewhat reduced. These latter are precautionary measures, and are recommended not only with a view of lessening the chance of supervening inflammation, but also to prevent the sudden change from activity to perfect rest from disturbing the general

health ; and they are therefore applicable, upon the same principle, to every kind of accident requiring confinement.

After one or two days the injured part, particularly if a great joint, as the ankle or the knee, be implicated in the mischief, will feel hot, look red, be more or less swollen, and the patient will describe the pain as having more of the throbbing than of the aching character. This constitutes the *second stage*, and the practice now consists in the repeated application of leeches, and, as soon as the bleeding is over, the continued application of cold evaporating lotions, as formerly described, and recommended in all local inflammations. The number of leeches, and frequency of their application, must of course be determined by the degree of severity of the case ; and repeated doses of aperients, with common fever saline draughts in the intervals, will be called for, if these symptoms of inflammation appear to disturb the general health. The continuance of this stage, and consequently of this practice, will of course vary, but absolute rest must be enjoined until the inflammatory symptoms have subsided.

After the subsidence of the above symptoms there will be stiffness, and more or less of pain on motion, or attempt at motion, and this constitutes the *third stage*. It may be said to commence when all inflammatory symptoms have disappeared, as swelling, redness, and pain when the limb is at

rest; but the appropriate practice should not be adopted all at once, or in too great a hurry. A soap plaster to confine the action of the injured parts, and moderate exercise for a few days, is all that should be allowed. The degree of pain in attempting motion will vary with the seat of the injury, and according to the degree of violence of preceding symptoms; and it will sometimes require great fortitude in the patient to persevere in the attempt, as much as is required to promote the cure. The further practice in this stage is friction, frequent motion of the part to be effected by another, if not sufficiently performed by the patient himself, and the douche, or stream of water, pumped or poured upon the part.

Friction cannot be better performed than by the naked hand, but it must be persisted in for two or three hours daily; and as it can seldom if ever be performed by the patient, some friend, servant, or nurse, must be instructed how to perform this rubbing, as recommended by the late Mr. Grosvenor, surgeon, at Oxford; and which is now pretty generally known under the name of Grosvenor's rubbing system. It consists in simple rubbing with the hand, so as to press considerably with the ball of the thumb, and in continuing it uniformly for a long time, which much practice only can enable any one to do. If the skin becomes tender with all this rubbing, it will be well to dust the part with hair-powder at the commencement of the ope-

ration. Embrocations or liniments for the purpose of friction are not of much, if of any intrinsic value, though greatly esteemed by some surgeons, and highly extolled by every Lady Bountiful. When, however, I apprehend that embrocations will induce a more persevering application of friction, I am in the habit of prescribing them, and I know of none better than the compound soap liniment, or opideldock.

The second piece of practice recommended in this stage of a sprain is free and frequent motion; and to be effectual, it will require not only great perseverance, but considerable fortitude. After the inflammatory stage is over, during which motion was forbidden, the first efforts will necessarily be attended with more or less of pain, and if the resolution of the patient fail, a contracted or stiff joint may be the consequence. The scientific surgeon will be at no loss to devise the proper means, and give the necessary instructions, for promoting that degree of forcible motion to the joint, which each particular case may require; and it may frequently become your duty to urge and encourage the patient to submit to present pain with a view to secure future ease and comfort. It is in such cases that professed bone-setters and other quacks so frequently obtain a surreptitious credit. The patient, finding no improvement because he will not submit or persevere in the painful efforts prescribed, forms some notion of a fracture or a dislocation of the bone, or

at any rate of some injury which the surgeon has failed to ascertain. With this conviction he resorts to the bone-setter, who, to enhance the importance of his own services, assures the patient that his conjecture is well grounded, proceeds to explain the nature and situation of the pretended fracture or dislocation, and, having obtained his acquiescence, he uses the greatest degree of rude violence in extending and twisting the limb in every direction; by such means he now and then effects a sudden cure by the forcible rupture, perhaps, of some preternatural adhesion, the consequence of previous inflammation, which a perseverance in the judicious advice of the surgeon would either have prevented forming, or have afterwards elongated or broken down with less than half the pain now inflicted. In a majority of cases, however, these rude efforts fail, and leave the patient, after immense suffering, in a worse plight than before, by inducing fresh inflammation, and more obstinate contraction. Yet so easy is it for impudence and ignorance to practise on the credulous, that a few successful cases will establish the pretender's fame, where, in all probability, the earlier directions of the surgeon, if persisted in with fortitude, would have effected the object with much less of suffering; and the unsuccessful cases, however numerous, are all most artfully attributed to the want of skill in the surgeon first consulted. Let me here caution you, and the public too, against giving preference, in

any case, to uneducated boasting pretenders, in a science which demands the highest order of talent and education. And further, let me advise the timid surgeon never to neglect a case of sprain in this third stage, nor to cease his exertions and best endeavours, by forcible extension and flexion, frequently repeated, to give freedom to the limb, even at the risk of being stigmatised as unfeeling.

The third piece of practice in these cases is the douche, or stream, or jet, of water, warm or cold, upon the affected part. The practice of pumping on a sprained ankle or a sprained wrist is very old, and its efficacy, in many cases, very credibly attested. In every fashionable watering-place will be found ingenious modes of applying the douche of either hot or cold, simple or medicated water, in a full or gentle stream, from a greater or smaller height; and at home all this variety in the mode of its application may be very well attained by a large pitcher, or a watering-pot without its rose. It should be used once a day; the water should be a little warm in winter, and cold in summer; but the regulation of temperature, the length of time, and height from which it should be poured, will be easily ascertained by you in each particular case, when I state that the immediate effect should be somewhat short of numbness and absolute pain; and the speedy result should be that agreeable glow in the part, which in general bathing is

esteemed the criterion of benefit, when diffused over the whole frame. After every application of the douche, the part should not only be dried, but well rubbed for half an hour or more, and the practice should be continued as long as the benefit, which is derived from it, is perceptible, or until the strength of the part be fully re-established.

CONCUSSION comes next to be considered. The term implies a shock, and in surgery it may be defined, an injury to some internal part of a living body inflicted by sudden external violence, not necessarily accompanied by an external wound. It may or may not be connected with fracture or dislocation, or it may be accompanied by bruise or sprain.

The external violence is almost always a blow, or a fall; which latter indeed may be considered a blow, the force proceeding in this case from the momentum of the patient's body instead of the momentum of the instrument, which, in the other case, inflicts the blow. The nature of the injury is the same.

Concussion of the *Brain* is the most common accident of this kind, and certainly it is the most important. We also meet with concussions of the spine, and concussions of the trunk. In this order we shall proceed to treat of them.

When a person receives a blow on the head, or falls upon his head, and is stunned by the accident, he has experienced a concussion of the brain. It

was supposed by surgeons of old, and perhaps many entertain the same notion still, that in such an accident no appreciable injury has been sustained in the texture of the brain, but surely it is more philosophical to suppose that in *every* such concussion there is for the time a deviation from the natural and healthy structure of the brain. This deviation may in some cases be extravasation of blood from ruptured vessels, and this may be minute or extensive. In other cases, no doubt, it is only a transient change in the circulation, occasioning slight congestion of blood in the vessels of one point, with perhaps a diminished quantity in another.

The effects of such concussion are sometimes so slight and transitory, that in a single minute, or less, consciousness returns, and no further inconvenience is experienced, or perhaps a slight headache, or trifling degree of mental stupor, may continue for a shorter or longer period. In severer cases the sufferer remains for a longer time unconscious, and his senses return very gradually; he first of all recognises some person about him; he ascertains from surrounding objects where he is, or that he is in a strange place; he has a confused notion that some accident has happened; in a little time he recollects where he was, or whence he started, some hours ago; and at length he traces in thought circumstantial occurrences down to the moment, or, what is frequently the case, down only to within

a few minutes of his accident. This degree of concussion is frequently attended with vomiting, and indeed this affection of the stomach succeeding to an injury of the head is very indicative of concussion of the brain. In still severer cases consciousness does not return for some days, or never fully returns. Symptoms of apoplexy, or palsy, of inflammation of the brain, or of high cerebral excitement without inflammation, may supervene, which may prove speedily fatal, or ultimately terminate in epilepsy, fatuity, or other chronic affection of the brain; or those severe symptoms may terminate in slow but perfect recovery. With none of those formidable consequences of concussion have we anything to do. It is indeed only as to the treatment to be adopted immediately after the accident that I shall make any observations, for in all cases of a severe grade I conjure you to consign the sufferers, as speedily as may be, into the surgeon's hands.

If then you be a witness of such an accident as has been described above, or if you arrive upon the spot immediately afterwards, and find the patient senseless, or but partially restored to consciousness, you will first examine his countenance, feel his pulse, and ascertain the temperature of his body. In every case, unless the countenance be pale, the pulse feeble, and the skin cold, proceed immediately to bleed your patient, and take away from twenty to thirty ounces of blood, according to

the natural stamina and previous health of the sufferer; convey him home; and prescribe rest, low diet, and a moderate dose of physic. If, on the contrary, you find the pulse feeble, countenance pale, and skin cold, give a little brandy and water, put on additional clothing, remove him, as speedily as can be, to a warm room, and prepare, where it can be done, a warm bath. Watch, however, the amount of re-action; and if, after an hour or two, the pulse becomes full, the heat of skin above the natural standard, and particularly if he complain of headache, proceed without hesitation, if the surgeon has not yet arrived, to a moderate or a full bleeding, according to the amount of this re-action, and adopt rest, quietude, and a low diet.

It may not be amiss to observe here, though it is unconnected with concussion of the brain, that the feeble pulse, pallid countenance, and coldness here described, together with sickness, are also particularly liable to occur, where a more delicate and peculiarly sensible part is injured, either by pressure against the saddle, by the horse's foot, or otherwise, in cases of falls in riding; and in such cases, unconsciousness, when it occurs, arises from syncope, or fainting, and of course requires warmth and cordials. The immediate local treatment is warm fomentation, and suspension of the part by proper bandages, and afterwards leeches and cold lotions, if the part remains tender, with rest in the horizontal posture.

When a person receives a blow, or falls rather upon his back than his head, he is, perhaps, but little, if at all, stunned, he gets upon his legs, staggers, and falls again, his pulse is feeble, and perhaps irregular, his countenance is pallid, and he feels faint, but soon recovers sufficiently to walk home with some assistance. These are the symptoms of *concussion of the spine, or of concussion of the trunk*. The immediate practice is brandy and water in moderation, the warm bath, and rest. He will soon, if not at first, complain of some *local* pain, and the seat of this will mainly direct you in forming an opinion of the precise nature of the case. If it is over any part of the spine, you may deem it a case of concussion of the spinal marrow, and may expect a continuance of disturbed circulation; and anticipate, if the injury be severe, symptoms of partial paralysis, or some derangement of one or other of the vital functions. The state of the pulse often forbids general bleeding in such cases, even after warmth has been restored, and the natural colour of the countenance has returned; but you will never err in ordering leeches and warm fomentations to the pained part, if the surgeon has not by this time arrived to release you from your responsibility.

If the local pain complained of after such an accident be in the chest, if the breathing be interrupted, or the action of the heart irregular, or if a spitting of blood ensue, you are sure that this is a

case of *concussion of the trunk*, and particularly of the chest; with such symptoms you need not hesitate to bleed, and that largely. In other cases of concussion of the trunk, where the above symptoms are not at all, or but very feebly, developed, particularly when the accident has happened to an aged person, serious mischief is sometimes sustained, and the surgeon or medical practitioner alone can be supposed competent to decide as to the precise nature and extent of the mischief, and consequently to direct the appropriate practice.

In concussions of the trunk, the mischief is frequently sustained by some one viscus, or internal organ in particular, and is made apparent by corresponding symptoms, as by vomiting of blood when the stomach is injured, by bloody urine from mischief done to the kidneys or bladder. I remember to have been called, many years ago, to a young man, who, running in the dark, came in violent contact with an upright post; the shock threw him to the ground, he was taken up and assisted in walking home, but was soon attacked with severe pain in the body, and died in two or three days of peritoneal inflammation. The injury sustained here was a rupture of one of the small intestines, and consequent escape of its contents into the cavity of the abdomen. The only external injury was a slight bruise. In a similar manner the stomach, the spleen, the liver, the kidney, and the bladder, have been ruptured or lacerated; and when the

injury sustained has not been to this amount, some of these viscera have received a shock that has deranged their functions, and led to serious illness, acute or chronic, calling for the best judgment of a surgeon or physician to remove, or perhaps only to palliate.

Of FRACTURES I shall, as I observed before, say but little, as, in every ascertained case of fracture, as well as in all doubtful cases, the consequences of mismanagement are too obvious, and too serious, to admit of any conscientious man hesitating for a moment as to the propriety of sending for the most skilful surgeon in the neighbourhood. It may, however, sometimes be highly serviceable that you be able to pronounce whether there be fracture or not; as your opinion may decide the question of sending for a surgeon promptly, and it is of considerable consequence that a fracture or a dislocation be speedily reduced, before swelling and inflammation are set up.

I shall enumerate the most evident proofs of fracture, so that in such cases you may not be at a loss to form a judgment.

Those fractures are called compound, which are accompanied with an external wound communicating with the broken bone; and, in a great proportion of such cases, the bone either protrudes through the skin, or lies so near the surface, that it may be seen or felt upon an examination of the wound. Such cases, therefore, admit of no doubt

as to the existence of the fracture. Other fractures are called simple, and the existence of such is not always easy of detection. It is often, however, less difficult to decide that *no* fracture exists; for instance, if the arm be broken, it hangs down by the side, and the patient has not the power to raise it, and, when you attempt to raise it, you give considerable pain: again, if the thigh-bone or both the bones of the leg be fractured, he cannot stand upon that limb, or, by any exertion of his own, move it forwards for the purpose of walking. Now we know that other injuries of these parts may produce the same inability of motion, particularly some time after the accident, and we cannot from this alone decide that there is fracture; but if, on examination of a case some time after the accident, you find this inability; or if the patient declares that he cannot use the arm or stand upon the leg, which assertion is not unfrequently made to carry on some imposture; if, I say, upon minute investigation and by cross-questioning, you learn that he did walk immediately after the accident, or that he could then raise his arm to his head, you may feel quite assured that there is no fracture. The same observation holds good of dislocation of any of the larger joints. The most decided and only satisfactory positive evidence of simple fracture is the sensation of grating, called technically *crepitus*, which is commonly perceptible not only to the patient himself upon motion of the part,

but to another person handling the injured limb. After carefully removing the clothes, then take the extremity of the limb in one hand, and grasp the limb with the other hand above the injured part, and move both hands in a semi-rotatory fashion, or, holding the lower portion of the limb in one hand, press with the fingers of the other over the suspected seat of fracture, producing at the same time gentle rotatory motion of the extremity, and you will, in almost every case of fracture, feel and often hear the grating of the broken ends of the bone against each other. Sometimes the fracture is detected by a preternatural hollow or depression between the retracted portions of the fractured bone.

In injuries of the chest you endeavour to ascertain whether there be fracture of a rib by feeling with your fingers for crepitus, and by paying particular attention to the patient's breathing. If he breathe short, and complain of pain on a full inspiration at the precise part where the blow was received, if coughing or sneezing produce pain in the same spot, and particularly if coughing and spitting of blood have come on since the accident, you may, without hesitation, pronounce that there is fracture of a rib, and in the latter case a wound of the lungs by the fractured bone.

In fracture of the collar-bone, it almost always happens that one of the fractured ends slips over and rides on the other, in which case the nature of the accident is at once apparent.

It is not an uncommon occurrence, immediately upon the receipt of a fracture, for the person to faint away, in which case the horizontal posture, a little cold water, or a little sal volatile, will speedily restore him. Sometimes the patient, soon after the accident, is seized with coldness and a shivering fit, in which case you may give a little hot brandy and water, and, as soon as may be, strip off his clothes, and put him into a warm bed.

In stripping off the clothes from fractured limbs, let great care be taken that some discreet person support the limb steadily whilst another slips off, or, if there be the least difficulty, cuts off, the boot, trouser, or coat, as the case may be, always holding in remembrance that the slightest motion in a fractured limb produces considerable pain.

A bed or a couch is the properest resting-place in cases of fracture of the leg or thigh, as the recumbent is the only easy posture; and you need not be anxious to extend the limb, as most unprofessional persons would advise, but let it be in a relaxed position till the arrival of the surgeon.

I may here observe, that in all cases of accident, where constant and long confinement to bed may be anticipated, the ease and comfort of the patient will be best consulted by laying him upon a hard mattress in preference to a feather-bed.

If the arm be broken above the elbow, the recumbent posture will be the easiest, with the fractured part supported by a pillow; if below the elbow, a

sling made of a large silk handkerchief, suspended round the neck, will best support the arm, and the patient may remain sitting up; the sling should be sufficiently broad to extend from above the elbow to below the wrist, and care must be taken that the hand be not allowed to fall below the level of the wrist.

We shall now finish the subject of fractures with an observation or two on *fracture of the skull*. The different bones of the head may be depressed as well as fractured, and in young subjects they are often depressed without fracture. In most cases of fracture, indeed, one portion of the bone is pressed down below the level of the other, and this unevenness of surface under the scalp often renders the fracture sufficiently apparent, where there is no wound in the scalp. But, when the scalp is much wounded, the fracture, if it exist, may be detected both by the eye and the finger. But whether such be the case or not, keep my former advice in view; and if called to a person who, after a blow or a fall upon the head, remains insensible, be satisfied that the case is of too serious a nature to remain under your management. You may, as I said before, bleed such a patient, then convey him home, and put him to bed; if the scalp is wounded wash away the blood, cut away or shave off the hair around the wound, encourage the bleeding, if any, by warm sponging, and await the arrival of the surgeon.

On the subject of DISLOCATIONS I shall say still less. Total inability to bend any of the joints, with acute pain upon a forcible attempt made by another person to perform such motion, occurring immediately upon the receipt of an accident, is enough to excite strong suspicion of dislocation, and a surgeon should be sent for without loss of time, that he may have the advantage of performing the operation of reduction before swelling and inflammation of the surrounding parts have taken place, which would both aggravate the pain and render the immediate reduction more difficult, or even impossible.

If the shoulder be supposed to be dislocated, and you are sure there is no fracture, no harm will arise from your trying this simple experiment, which will sometimes occasion the replacement of the bone in the socket. Gently raise the extended arm by the wrist and elbow, until it is elevated a little above the horizontal line, and then allow it suddenly to fall by its own weight; upon which the head of the bone will sometimes resume its place in the socket; but if it does not succeed the first time, I do not advise you to repeat the experiment; nor do I sanction you in making any attempt at reducing this or other dislocations by pulling at, or extending the limb, as much anatomical skill is requisite to conduct such attempts in a proper way.

We may perhaps make one exception to this

caution, it being a case of the greatest emergency. Few surgeons admit the possibility of a dislocation of the vertebræ of the neck without instant death. I am, however, not prepared to deny all truth to the many recorded and reported cases of sudden relief instantly obtained by attempts at extending the neck under such appalling circumstances. Let us suppose a person to be thrown from his horse with violence, to pitch upon his head, and to lie senseless on the ground, with his head bent in a very unnatural manner, and that the head cannot be restored to its natural or straight position by moderate efforts; I should certainly, under such circumstances, endeavour to produce extension by pulling at the head, whilst another person was drawing down the trunk by the shoulders; or, if none was by to help me, I should put my feet or my knees upon the shoulders, and pull the head with my hands, to make the necessary extension of the neck. Knowing the natural strength of the muscles and ligaments of those parts, I should feel no apprehension of doing harm, and I think it probable that sometimes a partial dislocation of one of the vertebræ may have occurred, and may have been thus reduced; although I do at the same time admit, that most of the cases which we hear of in conversation, have been cases of persons only stunned by their falls, and perhaps more speedily aroused by the violence of those rude efforts at extension.

LETTER VI.

ON ABSCESSSES, BOILS, CARBUNCLES, ULCERS, WARTS,
AND CORNS.

MY DEAR SON,

HAVING in my introductory letter professed that I should not adopt any nosological or other systematic arrangement, I need offer no excuse for bringing together subjects so heterogeneous in this, which I intend to be my last letter on the surgical department of our subject; but shall proceed to treat of whatever remains worthy of consideration, and which promises to be conducive to the object at which I aim, as the different topics occur to my recollection.

By ABSCESS is meant a collection of matter or pus formed and confined in any part of the body. It is called an *external* abscess, when situated in the fleshy parts, or in the cellular substance under the skin, or in the lymphatic glands, or in any other part which is so near the surface, that the intervening parts, between the original seat of inflammation and the surface of the body, become gradually absorbed in the natural progress of the case, and the matter makes its exit externally. It is called an *internal* abscess, when situated within any of the great cavities, or in some viscus, as the lungs, liver, kidney, &c.; in which cases the

matter only now and then finds its way into the natural cavities which contain the viscus; or now and then, by adhesive inflammation and succeeding ulceration, into other natural passages, as the bowels, the bladder, or the air-vessels of the lungs.

The formation of matter is always the consequence of previous inflammation, and the quality of the matter is influenced by a great variety of causes. The matter formed in a fleshy part, and in an otherwise healthy person, is a whitish cream-like fluid, soft, smooth, inodorous; when formed amongst ligaments and tendons, it is thinner, and somewhat discoloured; when formed in contact with diseased bone, it is usually discoloured and always tainted; and when formed in contact with the large intestine, as in an abscess, called from its form the horse-shoe abscess, in the immediate neighbourhood of the rectum, its smell is most nauseous; and when such an abscess is opened, the stench is intolerable, though the matter in other respects is what is called healthy. This peculiarity is attributable to the long-continued absorption of sulphuretted hydrogen through the coats of the rectum, by the process lately termed endosmose.

In constitutions tainted with scrofula or syphilis, the matter has peculiar qualities; and in small-pox it is well known that the matter formed in each pustule has the specific quality of communicating the disease, though in its external appearance it differs not from common pus.

In every case of internal abscess, anatomical knowledge is required to ascertain its precise seat, its extent, its real importance, and consequently its proper treatment. Of such, therefore, I shall say nothing; and shall confine my observations to the more simple form of external abscess. This is only distinctly and satisfactorily ascertained, when a sense of fluctuation is perceptible *per tactum*. This is always preceded by pain, heat, and throbbing in the part, and by soreness or tenderness on firm pressure over it; and sometimes by redness on the surface. The more deeply seated the inflammation, the longer it is before fluctuation can be felt; and the more diffuse it is, the less distinct, generally speaking, is the sensation of a contained fluid. When an abscess is forming near the surface, the throbbing pain, the swelling, the superficial redness, and sense of fluctuation of the contained fluid more quickly succeed each other, and the matter sooner approximates the surface. And when a lymphatic gland near the surface, as in the neck, in the arm-pit, or in the groin, is the seat of inflammation and suppuration, a circumscribed hard tumor with but slight pain, and uneasiness on motion implying the action of muscles in its neighbourhood, are the first symptoms; and these draw the patient's attention often long before the formation of matter.

Of the management of abscesses I shall treat briefly, because they can never be supposed to re-

quire instant attention, and proper surgical aid may therefore always be procured; and what few observations I do make, will refer principally to the means to be adopted in their early stage. When any painful tumor is accompanied with a sensation of heat and throbbing, you cannot do wrong in applying leeches, and encouraging the bleeding by warm poultices; you may also without hesitation order a full dose of calomel and rhubarb, with a draught of salts and senna. If the symptoms subside, repeat this treatment in a day or two; but whether, in the intermediate time and afterwards, you should keep the parts cold by lotions of goulard or vinegar and water, or warm by means of fomentations and poultices, is a matter not fully decided: my own practice is to resort to that which soothes and gives most ease to the patient, which, generally speaking, is the application of warmth; and when resorted to early, it is as efficacious in discussing the tumor as the application of cold. When the tumor is an enlarged gland in the neck, makes slow progress, and is not very painful, I have known it frequently and speedily dispersed by a blister over its surface. When fluctuation is evident in an abscess, fomentations and poultices are universally recommended, until either nature or the surgeon effects an outlet for the matter, and indeed afterwards they constitute the chief local treatment. I may just observe, that in an enlarged superficial gland, of the neck for instance, an early

opening is advisable ; that, in deep-seated collections of matter under a fascia, an opening should also be made as soon as fluctuation is positively ascertained ; but that, in other abscesses not deep-seated, it is better to wait, not only till fluctuation is distinctly felt, but until the skin becomes thin on some portion of the surface, and the tumor points. Thus you may form some judgment as to the proper time of opening an abscess, but when you think that time has arrived, I advise your sending for a surgeon, if you have not done so before ; for, with your limited knowledge of anatomy, you can never be sure that injury to important parts lying contiguous may not be risked, neither will I pretend to instruct you how to be able always to distinguish the presence of pus in an abscess from blood in an aneurism, seeing even able surgeons have now and then been woefully deceived.

BOILS are hard, deep-red, inflamed, and very painful tumors, having their seat in the skin and subjacent cellular membrane. In the progress of a boil, a small vesicle forms on the apex, which is exquisitely painful, from which issues a drop or two of lymph, forming at first a greyish and then a dark-coloured scab ; when this scab bursts or breaks, matter is at first discharged, which is usually bloody, and ultimately a core or soft membranous mass, consisting of cellular membrane as it were soaked in pus. After this tedious process, the cavity fills up slowly, and the hard swelling gradually sub-

sides. Boils occur on many parts of the body, but particularly on the neck, back, and buttocks. A simple boil may appear under circumstances of the most robust health and strength; but when several have appeared either simultaneously, or in quick succession, I have observed it to be in persons otherwise out of health, and particularly such as are suffering, or have lately suffered, from fatigue and anxiety.

The treatment usually recommended is to foment and poultice freely, until fluctuation can be felt within the tumor, then to open it with a lancet, to squeeze out the crude matter, and further to continue the poultice as long as there is any discharge; or, for the convenience of the patient, an adhesive plaster may be kept on by day, and a poultice applied at night. The cure is expedited by pressing the tumor at each dressing to force out the matter, and this is particularly necessary, if, instead of being lanced, the boil has been allowed to break spontaneously. Such is the treatment when a boil proceeds to suppuration; but I have so often succeeded in discussing boils by early attention, that where a person is troubled with a succession of them, and is therefore aware of its nature as soon as a small, hard, and painful little tumor is distinguishable, I strongly recommend the immediate application of a leech to the spot, and the next day the application of the lunar caustic over and around the inflamed tubercle, avoiding of course the

leech-bite. The frequent consequence of such practice is the cessation of pain, and speedy disappearance of the tumor.

CARBUNCLES are in their nature so much like extensive ill-conditioned boils, that it is often difficult to draw the line; and cases of middle character sometimes occur, which one eminent surgeon would call a boil, and another equally eminent a carbuncle, and which I have known a more wary or sagacious surgeon denominate a Carbuncular Boil. A carbuncle, like a boil, appears at first in the form of a small painful pimple, but an extensive hard and deep-seated tumor is soon discoverable round its base, sometimes as large as a saucer. Frequently several pimples appear on the same tumor; and as the carbuncle advances to suppuration, it breaks, and discharges at each pimple, and a similar core is ultimately formed, and presents itself at each opening. Carbuncle too, like boil, is sometimes solitary, and in other cases many of them occur in the same patient simultaneously, or in quick succession. When, therefore, you see a large deep-red and deep-seated tumor under the skin, usually on the neck or between the shoulders, in its progress opening by ulceration of the skin at several points, and discharging bloody matter, and afterwards a pulpy membranaceous core, you may denominate it a carbuncle. It occurs only in very old or otherwise debilitated persons, is itself a sign of a constitution that is giving way, and although

the pain is not so much complained of as in boils, probably from less of keenness in the sensibility of such patients : it sometimes hastens the final catastrophe, and is therefore frequently said to terminate fatally.

The local treatment is nearly the same as for boil; fomentation, poultice, and an early opening of the tumor. The fomentation may be made more stimulating by sprinkling the flannel with hot brandy, both before and after the opening of the tumor. When the discharge is very offensive, the chloride of sodium may be used as a corrective, and the yeast poultice substituted for that of bread or linseed meal. On the subject of opening the tumor it may be said, that it ought never to be omitted, it cannot be done too soon, if fluctuation be at all perceptible, and it should be free, that the whole core may be speedily evacuated. The matter should be pressed out at each dressing, and the fomentation and poultice continued through the whole progress of the case. The constitutional treatment consists in supporting the strength by bark and a nutritious diet.

Old ULCERS, or sores, particularly on the lower extremities, are of frequent occurrence, and you will often be called upon by your poorer neighbours to supply them with what they term healing salves for the purpose of dressing such sores. You need be at no loss to recommend some infallible salve or cerate, if you can credit the high encomiums passed

upon advertised nostrums or old nurses' recipes. I caution you, however, against giving credit to any such general professions, and I can assure you, that in many cases dry lint is better than any salve; and that in almost every case the mode of dressing an old sore, and the proper management of the patient's general health, is of much greater importance than the nature of the ointment, with which your lint or linen rag is spread for the dressing of the sore.

Old ulcers may have arisen from accidental wounds indisposed to heal, or from spontaneous boils, abscesses, or eruptions; or they may be the natural effect of certain morbid conditions of the whole system, venereal, scorbutic, scrofulous, or cancerous. Of such general taints in the constitution, and their local effects, I do not mean to treat in this place, but shall confine myself to the consideration of what is generally understood by the term *simple ulcer*, which is usually divided into three kinds—the purulent, the indolent, and the irritable; but as these conditions of the sore are very frequently observed in the same case at different periods, induced by irregularities in the habits of the patient, or superinduced upon the accession of some general constitutional disease, I shall treat of old ulcers, such as are likely to come under your cognisance, under one head—noticing, however, such peculiarities as require a difference in their mode of management.

If you are requested to undertake the treatment of an *ulcer on the leg*, and upon examination you find it covered with a thick healthy-looking matter; if the edges are regular, not much or not at all elevated; and the granulations or new growths are small, conical, and firm, and not disposed to bleed upon slight pressure; and particularly if you see a delicate white film around the edge of the sore, and on the tips of the little conical granulations, you may be sure that this ulcer is in a healthy condition, and that some impropriety in the management must have interfered with and retarded its healing. The following is the most approved method of dressing such an ulcer. Apply, first, a pledget of dry lint of the size of the ulcer, for nature, in the production of a healthy pus, furnishes the sore with what is better than any salve; and apply over the dry lint a larger pledget spread with simple cerate, to prevent evaporation, and the consequent stiffening of the under-dressing. The evil to be dreaded from the dry pus and hardened lint is the removal of the fine film, before alluded to, from the edges of the sore, and from the tips of the granulations, which delicate film is the matrix of the new skin. For the same reason I must caution you against wiping or even washing such a sore, the matter being the most sanative dressing, and the new skin, or rather its embryo, being very easily detached. Over the larger pledget it is advisable to apply a compress of linen rag, and over

this a calico roller to keep all in its place, and to defend the sore from external violence. This healthy ulcer need not be dressed oftener than once in two days.

We will now suppose that you are requested to look at an ulcer that is cup-shaped, with hard elevated edges, the sore itself smooth, dry, and not very sensitive when touched; the patient is in all probability past the meridian of life, and you will very likely find the veins of the leg swollen, or, as we term them, varicose in many places. Such an ulcer, if you inquire into its history, is of long standing, has probably appeared more than once to be nearly healed, the hollow having been filled with granulations; but that it has suddenly altered in its condition, the granulations, which were soft and flabby, having been speedily re-absorbed, and the size of the sore having as suddenly been enlarged. Such a change is likely to occur again, unless the patient is guarded against irregularities in his habits, and the local treatment of the sore be properly conducted. If the patient is out of health, this circumstance must be attended to, and every excess in diet or potation, habitual or occasional, must be carefully avoided.

The local treatment of this cup-shaped ulcer in its present state consists in stimulating the surface of the sore, and in the proper application of tight bandages. If the hollow of the ulcer be dry and glassy, I sprinkle the surface with red precipitate

in fine powder, and fill up the hollow with either dry lint, or lint spread with red precipitate ointment. If the edges be covered with hardened cuticle, I remove the hard scales with the edge of a spatula, and then draw the point of a stick of lunar caustic moistened over the callous edges, and finish the dressing by the application of the adhesive plaster bandage, and then the calico roller. The dressings should not be removed oftener than once in two days; and when the ulcer assumes a moist appearance, which will usually be the case after one or two such dressings, you may omit the powder, and only apply the red precipitate ointment to the interior of the sore; and you need not repeat the caustic to the edges, unless they are very much elevated and indurated. Should the sore in its progress exhibit soft and broad granulations, and these be disposed to bleed, you should apply lint moistened in a solution of lunar caustic instead of the ointment, or touch them slightly at each dressing with either blue vitriol or lunar caustic, and continue the use of the same ointment, until the granulations assume a healthy appearance. These observations are, in my opinion, of considerable importance in the management of such ulcers; but the application of the straps and bandage, for which I am now about to give directions, is of infinitely more importance still, and some surgeons trust wholly to them, being perfectly indifferent whether any dressing be

applied or not to such sores as we are now describing. I am, however, decidedly of opinion that such dressings as we have described are useful, until the hollow of the ulcer begins to secrete a healthy-looking pus, and to show signs of commencing granulations, after which it is very immaterial whether the dressings be continued or not.

The objects to be attained by the *plaster bandage* are, first, a firm and even pressure over the edges and surface of the ulcer; secondly, the contraction of the sore, and consequently diminution of the cicatrix or scar, by bringing the sound skin at the sides of the ulcer into closer approximation; and lastly, uniform and firm pressure over the whole limb, with a view of supporting and improving the condition of the varicose veins, and perhaps debilitated lymphatics also.

The adhesive plaster is to be cut into straps of two inches in breadth, and sufficiently long to go round the limb, and to wrap about four inches over. The sore having been carefully freed of superfluous matter, not by washing or rough sponging, but by gently absorbing it by means of a little soft lint; the sound skin around the ulcer having been carefully washed and dried, and the hair, if in abundance, having been removed by a razor, the middle of the strap is to be applied to the sound part of the limb opposite to, and a little lower than, the inferior part of the ulcer, and the ends drawn over the sore with as much gradual extension as the patient can

well bear; other straps are then to be applied in the same way, each above and in contact with the other, until the whole surface of the sore, and the limb at least two inches below, and two or three inches above the diseased part, are completely covered.

The *calico roller*, which is to be applied over the plaster, should be from three to four inches wide, and from four to six yards long, according to the size of the leg. It must be applied with great exactness; and if you wish to excel in this piece of surgery, you must apply to your surgical friend to give you a practical lesson or two, which will be of ten times the value of my description. The first circle of the roller should be round the ankle, as near as possible to the foot, the second and third round the foot, the fourth and fifth round the ankle again, and then others spirally round the leg up to the knee, each circle at about three-fourths of an inch from the lower edge of the preceding, turning down the upper edge of the roller for about half the circumference of the leg in the three or four circles that surround the calf, in order to make the roller lie smooth at this part. I have observed before, that once in two days is often enough to remove the dressing; but should the ulcer, from irregularity of diet, intemperance, or other cause, begin to assume a less healthy appearance, and yet not sufficiently so as to require an alteration in the local treatment, and should the discharge in consequence become

considerable, should it be thin and offensive, and, particularly should the weather be hot, remove the dressings daily.

When you are not allowed, or from any cause are not able, to make use of the adhesive bandage, you will find flannel preferable to calico; and having first dressed the ulcer as directed above, and covered it with a compress of linen rag, you may trust with confidence to the firm and even pressure of the flannel roller; or, where the expense is not an object, you may substitute Churton's stocking bandage, made of cotton, soft and elastic, wove expressly for rollers.

For the purpose of producing uniform pressure on the sides and bottom of these cup-shaped ulcers, some surgeons now fill up the cavity at each dressing with melted wax, applying a small compress upon it, and the usual bandages over this. The plan is said to answer well, and is so easy of application, that should the ulcer not heal so readily as you could wish under the former treatment, you will do well to adopt it.

Ulcers, as I observed before, sometimes assume a less healthy appearance than what I have been describing, and require, at least for a time, a very different treatment. The margin, instead of being circular, becomes irregular, and the ulcer extends itself by the encroachment of this irregular margin upon the sound skin in a serpentine line, perhaps only on one side of the ulcer. If the margin is

elevated, it is at the same time undermined; the discharge is thin and usually copious, sometimes bloody, and often offensive in smell. If the ulcer be large, its surface consists of various distinct hollows or cavities; the granulations, if any, are apt to bleed; and the pain of such a sore is very considerable at all times, usually aggravated, however, in the evening or at night. Such are the characters of what have been denominated irritable ulcers.

Every ulcer may, by mismanagement or by irregularities in the habits of the patient, be made to assume for a time these peculiarities; and for this reason the majority of cases admitted into hospitals are, at the time of admission, of this description, and require for a few days at least the appropriate treatment of this species of ulcer; but there are some cases also which from peculiarity of constitution assume this character, and require the peculiar treatment of irritable ulcers through their whole progress. The local treatment of such sores is by anodyne fomentations and poultices; the constitutional by anodynes and alteratives. A decoction of poppies makes the best fomentation, and linseed meal brought to the proper consistence by a strong decoction of poppies, the best poultice. These sores should be washed at every dressing with a sponge and some of the warm fomentation; if the foetor is considerable, a rag wetted in a solution of chloruret of sodium may be laid immediately

over the sore ; or, if this gives pain, over the poultice. These are the appropriate dressings till the ulcer re-assumes the character of the healthy, or of the indolent sore above described, when the treatment will be, as recommended for them respectively ; but, as I have observed before, in some cases the irritable character still remains unaltered, and the peculiar treatment here recommended, namely, the anodyne fomentations and poultices, must consequently be persevered in till the cure is completed.

The constitutional treatment consists in giving opium or henbane every night, with or without calomel or blue pill ; and rhubarb with soda, and perhaps quinine through the day, according to the constitutional peculiarities, which professional judgment can alone appreciate.

CHILBLAINS are the effect of inflammation in parts distant from the centre of circulation, as the hands and feet, induced by alternate exposure to very high and very low temperature. To avoid chilblains, therefore, the hands and feet should be warmly clothed in winter ; and sudden exposure of them to the heat of the fire, when cold, should be carefully avoided ; and besides this, the languid circulation in these extreme parts should be promoted by active exercise, and by friction with stimulants. Certain constitutional peculiarities predispose to chilblains, and therefore we see a prevalence of them in some families rather than in

others; and they always prevail most in childhood. Such children, therefore, as are particularly predisposed to chilblains, should be habituated to brisk walking exercise in cold weather, and to such amusements as promote exercise in the hands, shuttlecock for instance, or rackets, and all games at ball. The feet and hands should be occasionally washed in the winter season in tepid water, with a small quantity of flower of mustard mixed in it. The feet should be well rubbed with spirits of wine and camphor every morning, and clothed in wash-leather socks. Great caution is also necessary to avoid the warmth of the fire, when the hands and feet are more than usually cold; friction with a warm hand being under such circumstances the most desirable mode of restoring warmth.

The early symptoms of chilblains are redness, heat, itching, and swelling, and the treatment in this stage is bathing the part three or four times a day with cold water, or spirits and water, till the heat and itching have abated, well drying the part, and covering it, as before stated, with soft leather; and also in adopting with greater care the measures recommended above as preventive.

The second stage is greater swelling, increased heat, smarting and burning pain as well as itching, and a purplish hue instead of the former red colour of the skin. The application of cold may now be more constant by means of spirituous embrocations, as goulard and spirits of wine; care, however, must

still be taken not to carry the plan beyond the reduction of the preternatural heat, after which the part may be lightly covered, but may now by no means be allowed to approach the fire.

The further progress of chilblains is the formation of small vesicles, which burst and leave excoriations, which excoriations often change to ill-conditioned ulcers, thus constituting the last stage. The ulcers, as well as the surrounding parts, are exceedingly painful, the itching and smarting are intense, the discharge is at first somewhat bloody, and they possess, in short, all the characters of irritable ulcers. While these ulcers are sloughing, that is, extending by the death and removal of contiguous parts, poultices are the best application, and it will be serviceable to bathe the surface of the sore with tincture of myrrh, or warm brandy, each time that the poultice is removed, which should be done three times a day. When the sloughing process is over, which will usually be in three or four days, stimulating ointments may be substituted for the poultices, mild at first, as yellow basilicon, and afterwards more stimulating, as the red precipitate ointment. It may be further observed, that as the parts in the immediate neighbourhood of the ulcer exhibit more or less the chilblain appearance, they must be treated according to the directions previously given, with more or less vigour.

WARTS and CORNS may be considered by some too slight and trivial deviations from health to de-

serve admission, even into a work of this description; but as they are the source of considerable inconvenience, particularly the latter, I shall not hesitate to offer a few plain and simple directions for the treatment of them.

Warts are adventitious growths, commencing in the substance of the skin, or on its surface, and are covered with the natural cuticle; as they rise above the surface of the skin they become broad and rough, and sometimes lobulated. They appear much more frequently on the hands than elsewhere, but sometimes on the eyelids and other parts of the face, as also now and then on other parts of the body.

If the wart is pedunculated, or has a very slender base, it is easily removed by tying a horse hair or fine silk thread round it; or it may be snapped off with a pair of fine scissors. When the wart is broad at its base, its removal may generally be effected by rubbing its surface with such stimulants as the following: sal-ammoniac, blue vitriol, powdered savine leaves, or a compound powder of equal parts of savine leaves and verdigris. The wart should be moistened, and the rubbing repeated twice a day, unless it becomes very tender and painful, in which case the application may be suspended for a few days.

Warts are most common on the hands of children or very young persons, and they usually disappear spontaneously after a longer or shorter period,

which has made them a fruitful source of imposition and trickery; so much so, that almost every village has a wart charmer, who pretends to remove them by her own calculations and spells, independent of any application whatever to the warts themselves.

Corns are very like warts, being hard but not horny preternatural growths, having their origin in the skin. Their situation, however, is always on the feet; they are flatter and more painful than warts, they disappear spontaneously much less frequently than warts, they are also removed with much more difficulty, and they are oftener the source of inflammation in the surrounding skin. It is probable that all these points of difference may arise from the constant pressure to which corns are subjected, as by walking when situated on the sole of the foot, but more particularly by the custom so generally adopted of wearing tight shoes. This pressure is, I know, by many deemed the cause, and the sole cause, of the origin of corns; but to this I do not accede, as I have seen corns so situated, that the pressure of a tight shoe could not affect them; and I have also known instances of very troublesome corns in families, where the greatest care was taken to avoid the pressure of tight shoes. I freely admit, however, that *pressure* from tight shoes or some other source is the cause of all the pain and misery occasioned by the presence of corns, and that without removing this pres-

sure no treatment will materially abate the pain, or permanently remove the evil.

Long-continued rest and the removal of all pressure would, indeed, I have no doubt, not only relieve temporarily, but allow of the absorption of the corn itself, and thus remove the evil altogether, as is so continually taking place with warts ; but as strict confinement will never be submitted to, we must content ourselves with such directions for the management of corns, as will preserve them tolerably free from pain.

When corns are exquisitely tender, and the surrounding skin looks red, it is absolutely necessary to wear a loose slipper, and rest the foot upon a stool for a day or two, and to bathe it freely with weak goulard. The remaining management consists in removing and preventing pressure upon the sensible skin at the base or origin of the corn, as well as pressure upon the corn itself. The former is to be effected by the total or partial extraction or destruction of the corn ; and the best means of doing this are first to soften the corn by soaking it for half an hour or more in hot water, and then to pick it, or carefully undermine it, by means of a dull-pointed probe, or a dull lancet, and a pair of forceps. This requires great patience, and is best done by another person. Care should be taken not to draw blood ; the picking or scratching should commence at the outer circumference of the hardened cuticle, should be carried all the way

round, and penetrate deeper as you approach the centre, the operator having from the first grasped the body of the corn by means of the forceps in the left hand, and using all the time a little force in pulling it outwards. With great care a considerable portion of the corn may be thus extracted, but I doubt whether the whole is ever thus withdrawn, unless when the corn is very superficial; and on this account I advise that this attempt at extraction be always followed by a slight application of lunar caustic; unless where the last strokes of the operation drew blood or caused pain, under which circumstances the caustic would be followed by too much inflammation. This tedious process of picking should be repeated once or twice after intervals of only a few days, and before the corn is sufficiently grown to be again subject to pressure, and consequently to be painful.

Some persons recommend the *cutting* of corns, and most people, I believe, adopt this plan, as the most expeditious and least troublesome. It should be done with a sharp knife, or lancet, by repeated very superficial cuts; and care should be taken not to draw blood, not because, as is vulgarly believed, both as regards warts and corns, that the blood will generate others in the neighbourhood, but because it occasions unnecessary pain, and, by inducing some inflammation, renders it injudicious to repeat the cutting for some time to come. I would further advise that after this operation the

caustic should be rubbed over the cut surface, and the operation repeated daily, or at intervals of two or three days, till as much of the corn is destroyed as can fairly be reached by the cutting instrument. I do, however, myself, prefer the former operation of picking as both safer and more effectual.

We now proceed to describe the various contrivances, which may be resorted to for the removal or prevention of pressure, which I have stated above to be the *sine qua non*, both in removing and preventing the pain attendant upon corns; and which ought, therefore, to be attended to immediately after either of the above operations, and ought to be afterwards permanently persisted in, until there is reason to believe that the corns have entirely disappeared. Tight shoes, the great bane of all, must be scrupulously avoided; and where the corn is situated on the side of the foot, or is prominent on one of the toes, much ease may be given by directing the shoemaker to attend to the circumstance, and to give a little more room in that point. The best guide will be an old shoe much worn, as the leather or other material will usually have stretched, and given way at this point. If the corn be on the sole of the foot, a false or inner sole to the shoe should be made with a corresponding hollow. When the corn is between the toes, a small bolster may be contrived to keep the toes separate, or this may be done by a very narrow slip

of adhesive plaster round one of the toes, so as not to cover or press upon the corn. And lastly, when the corn is on the upper part of the foot or toes, or on the side of the foot, several pieces of plaster should be applied over the corn, each with a hole cut in its centre corresponding to the size of the corn, until the plaster rises above the surface of the corn, which will then as it were lie in a hollow, protected from all pressure. In cases where the corn is already depressed below the surface, a simple plaster laid over it will afford considerable protection, and it is in such cases only that the various advertised corn-plasters can be of much service.

LETTER VII.

ON SUSPENDED ANIMATION FROM DROWNING,
HANGING, SUFFOCATION, AND CHOKING; AND
ON POISONS.

MY DEAR SON,

HAVING concluded that part of my subject which may be considered as strictly surgical, and being about to enter upon the medical department, I must again remind you, that my object goes no further than to prepare you, in the first place, to act discreetly upon sudden emergencies, whether

they be such as form the subject of the present letter, or as they may regard sudden seizures, as fits of various descriptions, and the early symptoms of other important and dangerous diseases; and in the second place to enable you to assist your poor neighbours in the management of those trivial disorders, the care of which they are accustomed to undertake themselves, or commit to the management of old nurses. You will not, therefore, expect that I shall give you instructions for the treatment of more grave disorders, as apoplexy or epilepsy for example, except as regards the steps that are to be taken previously to the possible arrival of a medical man; neither shall I enter fully into the medical treatment of such diseases as measles or scarlet fever, though I shall endeavour to enable you to detect their early symptoms, and to direct the management of very mild cases.

Again, as regards typhus and remittent fever, inflammations of important organs, and many other dangerous diseases, I would dissuade you from ever undertaking the entire management of such cases, for they require all the judgment of the regularly-educated and experienced practitioner; but if I can teach you to discern the first symptoms of such formidable cases, and can prepare you to take an early step in the treatment of them, both the patient and the medical practitioner will have reason to thank you for your promptness, and you will yourself have the satisfaction of knowing that you

have mitigated after symptoms, and, perhaps, warded off danger.

On the treatment of agues, colds, coughs, chronic eruptions, and a variety of other ailments, which the poor are disposed generally to manage, or rather mis-manage for themselves, I shall give you more full and ample directions, that you may have the power, as I am sure you will have the inclination, to substitute rational means of cure for their crude and often baneful mode of treatment, and thus to snatch many from the risk of long-protracted ailment, and perhaps from the ruin of their constitutions.

This first letter of this second series, as it may be termed, will be devoted to the consideration of certain appalling cases of sudden death, and suspended animation, to which you may be liable to be called, both to direct the medical treatment when it can be available, and to give evidence in other cases at a coroner's inquest, or before any other judicial tribunal.

That you may more easily understand the cause of death in certain cases, and the rationale of the directions, which I am about to give, where animation is only suspended, I shall premise a concise description of the natural process of *Respiration* in man and all warm-blooded animals.

RESPIRATION is the reception of air *into* the lungs, and its expulsion *from* the lungs; the former act is termed *Inspiration*, the latter *Expiration*.

By the action of certain muscles, which elevate and depress the shoulders, protrude and draw back the breastbone, and straighten and relax the muscular and membranous partition, called the diaphragm, which divides the chest from the abdomen, the cavity which contains the lungs is alternately increased and diminished in all its dimensions. When it is increased, the air as naturally rushes into the lungs, and by the same laws, as it does into the body of a pair of bellows, when by raising one handle you increase the dimensions of the cavity. And again, when the cavity of the chest is diminished, the air is as necessarily expelled. This constitutes the mechanism of respiration; but the air thus received into the lungs, and the blood which in its transmission through the lungs comes nearly into contact with the air, are both materially altered in their chemical qualities. And so necessary is this chemical change in the quality of the blood to the maintenance of life, that if it becomes in any degree interrupted, disease follows, and, if suspended only for a very few minutes, death is the inevitable consequence. In this way does life become extinct in drowning, hanging, and suffocation, and also in choking, when any substance sticks in the throat, and so presses upon the wind-pipe as to prevent breathing.

In all such cases, however, you are not to be deterred from making attempts at recovery, although a much longer time than that above speci-

fied has elapsed since the person was supposed to have sunk under the surface of the water, or to have been suspended by the cord; for it frequently happens that the drowning person has risen unobserved to the surface, and, in the latter case, that the cord has only constricted the windpipe imperfectly. In every such case, therefore, where signs of commencing putrefaction have not appeared, some attempts at resuscitation should be made.

Here I may casually observe, that when consulted, which you are very likely to be in all doubtful cases in your parish, as to the propriety of interring a corpse which has not assumed the usual appearances of commencing putrefaction, you may bear in mind the following brief observations. There is no *single* unequivocal proof of death but putrefaction, the early signs of which are the peculiar odour termed the cadaverous smell, the appearance of livid spots and patches, particularly on the parts on which the corpse rests, and the increasing distention of the stomach and belly. The other appearances most indicative of death, and which, if all or most of them are present, may be considered as conclusive, are these:—

1st. The cessation of breathing, the best test of which, though not absolutely certain, is the perfect stillness on the surface of a small pan of water placed for this purpose on the chest of the corpse.

2nd. The want of pulsation in the heart, the

most accurate mode of ascertaining which is by the application of a stethoscope, or, what is a good substitute for it, a half-quire of letter-paper rolled up into a cylinder. One end of the stethoscope or its substitute being placed firmly over the heart, and the ear applied to the other end, the slightest action of the heart will be audible.

3rd. The coldness of the corpse; in estimating which as a sign of death, it must be taken into due consideration, that the body loses its heat in many cases of suspended animation, particularly when it has been immersed in water.

4th. Rigidity. The rigidity of death may be distinguished from the rigidity produced by intense cold, by the hard and brittle feel of the skin in the latter case, and by the crackling noise, when you move the frozen limb; and it may be distinguished from the rigidity, which is the consequence of spasm, by the limb in the latter case resuming its former position when forcibly moved, whereas the rigid limb of the corpse retains any position into which it may be brought. The test of rigidity, therefore, if not of putrefaction, ought to be waited for before interment.

5th. The cadaverous countenance formed by the hollow or sunken eye, sharp nostril, wrinkled forehead, temples and cheeks pressed in, and the livid colour. Of these particularities the soft, flaccid, cloudy, and sunken appearance of the eye is the most characteristic of death.

In cases of DROWNING the body should be carefully, and not rudely, drawn from the water, should be *immediately* stripped, wiped dry, and covered with some of the by-standers' clothes, unless a house be very near at hand. The position of the body, from the moment it is taken out of the water, should be constantly the horizontal, with the head a little elevated, and the chin supported from the chest. No shaking, no suspending by the heels, is to be allowed. The body when brought into the house should be wrapt in a blanket, and be laid on a mattress or bed upon a low table. The room should be warmed by a fire if the weather be cold, all unnecessary attendants be dismissed, and the process for resuscitation be immediately commenced.

This consists in the application of warmth, continued friction, and an attempt at artificial breathing, all which may be adopted at one and the same time; and afterwards in the cautious use of stimulants. To obtain the first object, let the blanket in which the body is to be wrapt, be made hot by a warming pan or other means, wrap the feet in hot flannels till bricks can be heated, which may then be covered with flannel and applied to the soles. A bladder half filled with hot water may also be applied to the pit of the stomach, and a similar one under each arm-pit. Two persons may at the same time be constantly employed in rubbing with their hands such parts of the body as can

be got at without exposure ; and two others may attempt, in the best way they can, to imitate the natural breathing. This latter very important operation will be best done by a professional man, and by means of the Humane Society's apparatus ; and we take it for granted that in every case both has been instantly sent for from the nearest station. Before the arrival, however, of the surgeon or the apparatus, you may have recourse to the following means. Obtain the smallest pair of bellows at hand, use them once or twice to blow out any dirt or dust that may be in them, wrap some soft rag round the nozzle, and apply it to one of the nostrils, whilst an assistant closes the other nostril and mouth with his hand. Having used the bellows two or three times, and watched for the expansion of the chest ; if it is perceived to heave or appears distended, then gently press upon the ribs and the pit of the stomach to expel the air, the assistant at the same time allowing the nostril and mouth to be open. Repeat the use of the bellows with the nostril and mouth closed, and the same pressure with the nostril and mouth open, alternately for many times, so as to imitate as nearly as you can the natural breathing ; and persist in it for two or three hours, even if no signs of returning life are apparent ; but should the action of the heart or the pulse at the wrist be felt, should a sigh be heard, or a twittering of any of the muscles of the face be perceived, continue the artificial breath-

ing, desisting occasionally for a few seconds to watch for the repetition of these signs of returning animation; and if they be repeated and become stronger, desist then altogether from the artificial respiration; and now, and not before, begin to apply with great caution some of the following stimulants. A feather dipt in vinegar may be introduced into the nostrils to excite sneezing, and thus rouse the action of the muscles of respiration; a tea-spoonful of hot brandy may be put into the mouth as a stimulus to the sensible membrane covering the tongue and palate, even before the return of the power of swallowing; a mustard plaster may be applied to the pit of the stomach for a few minutes, and others also to the soles of the feet, and the friction of the whole body should be still more perseveringly conducted. Upon a further improvement, as the opening of the eyes, deep sighing, and more regular heaving of the chest, all the above stimulants may be desisted from, save warmth; and as soon as it can be swallowed, the administration of small quantities of warm wine and water, and afterwards of broth, gruel, or milk porridge, will be both safe and beneficial. The greatest quietude and care in nursing will afterwards be required for a day or two, to prevent excess in the reaction, which might lead to inflammation or other mischief.

In HANGING the cause of death is the same as in drowning, namely, the exclusion of air from the

lungs, or the stoppage of breathing; and not, as some have supposed, apoplexy from a stoppage of the blood in the head. The treatment of a person who has been suspended by a cord round the neck, must altogether be precisely the same as has been recommended in cases of drowning, except that an attempt may, in the first place, be made to bleed in the arm, or, if a surgeon be at hand, in the jugular vein, with a view of relieving the vessels of the brain, which are in such cases probably distended, though not so as to produce apoplexy.

Should you ever be called upon to give an opinion as to whether a person found dead in a state of suspension has had his death caused by hanging, or has had the cord tied round his neck after death, you may frequently satisfy yourself upon this point by an examination; for when the mark round the neck, where the cord was applied, is of a deep purple colour, you may conclude that it was applied before death; but the converse of this does not hold good, because the purple mark does not take place in all who are hanged; but it never takes place when the cord is applied after death.

SUFFOCATION may take place either from exposure to some noxious air, or from the exclusion of air altogether. Instances of the former kind are not uncommon from inconsiderate confinement in rooms heated by charcoal, from persons falling

asleep very near to or upon kilns of burning lime, or from incautiously venturing into common sewers, or wells, without first ascertaining the state of the air by the test of lowering a lighted candle. The most common occurrence of the second species of suffocation is when an infant is, from carelessness or ignorance, so covered with bed-clothes, or overlaid by the nurse, as to exclude the access of fresh air to the lungs. In all cases of suffocation the treatment is the same as before described in cases of drowning, with this additional observation, that the recovery is frequently expedited by first exposing the body to the air, and frequently dashing cold water over it.

When called to a person found dead, or apparently dead, where the probability of drowning, hanging, and suffocation is entirely out of the question, and where no marks of external violence can be discovered, you will be led to suspect INTOXICATION; and if there is a smell of spirits or other fermented liquors about his person, your suspicions will almost amount to certainty, and particularly so, if you discover proofs of his having recently thrown up the contents of his stomach, and if these again emit the odour of beer, wine, or spirits. In such a case you should place the head in a natural position, throw water in the face, endeavour to administer an emetic, and then, if there be no signs of life, use all the means above recommended for the recovery of persons recently drowned. The imme-

diate cause of suspended animation, or death, in such cases of intoxication, is sometimes apoplexy, and sometimes syncope or fainting. When a purple and bloated countenance, with blood-shot eyes, indicate the former, an attempt should be made to bleed in the arm, or if a surgeon be at hand, in the jugular vein; if, on the contrary, the countenance be pallid, warmth, stimulants to the nostrils, and the occasional dashing of cold water, should be the expedients first resorted to.

The term **CHOKING** is applied to the accident of something sticking in the throat, whether it be a body too large to pass readily into the stomach, and being therefore detained in some part of the *œsophagus* or gullet, in the act of swallowing, or whether it be something which has accidentally passed from the mouth into the trachea or into the windpipe.

In the former case, the alarm and danger arise from the obstructing substance pressing upon the windpipe, which lies in front of, and in close contact with, the gullet; the removal of which may be attempted in various ways, according to the nature of the substance, and its position. In a great majority of cases the substance is some article of food, and it is usually situated so low, as to make it more easy to push it down into the stomach than to bring it up by the mouth. The instrument used by the surgeon for this purpose is a small ball of sponge at the end of a long piece of whale-

bone, and is called a *probang*; but as the introduction of it requires some care to avoid its passing into the windpipe, I do not advise your attempting it but in extreme cases, and when a surgeon cannot be procured. What is first to be done is to look into the throat, to see whether the substance is within reach of the finger, as is very frequently the case when children are choked by incautiously attempting to swallow large pieces of apple, orange, pudding, meat, or any other kinds of food. In all such cases you will use your own discretion as to pushing the obstructing matter downwards, or attempting to withdraw it; the latter of course being most desirable, if as easily accomplished. The best position for a patient whose breathing is thus obstructed, is the horizontal one with the head elevated. When the offending matter cannot be reached, it is advisable still to introduce the finger into the throat with a view of exciting the action of vomiting. But should these means fail, and the patient's face become turgid and livid, and should no surgeon have arrived, you must devise the best means you can to form a substitute for the *probang*, with which to reach the offending matter, and push it forward into the stomach. A pliable twig or piece of cane, if whalebone be not at hand, must be prepared by tying a hard ball of linen, if you have no sponge, at its thinnest extremity; and this must be done by boring or burning one or more small holes

in the cane, as the only means of securely fastening the sponge, and avoiding the danger of its coming off in the gullet. The ball having been soaked in oil, you proceed to introduce it by first inserting the fore-finger of your left hand over the tongue to its root, and then sliding the probang along the finger to direct it over the opening of the wind-pipe; and having thus got it fairly into the gullet, you thrust it down upon the obstructing body with the requisite force to push it forward. If the substance be anything that is digestible, no further precaution is called for; if it be a coin, a marble, or anything of that kind, which has been accidentally swallowed, you must refrain from the common practice of giving castor oil, or any other purgative, to promote its expulsion; for the passage of such a solid body through the intestines will be most safely effected by its being enveloped in the ordinary contents of the canal in even a more consistent and solid state than usual, and not in the liquid state, which would be the consequence of a dose of physic. The only directions therefore to be given, are to abstain from much drink or fluid food, to live on pudding, porridge, bread and meat, and to watch carefully for the expulsion of the offending matter, that the mind of the patient may be relieved from all anxiety.

If the substance sticking in the throat be a rough or pointed body, as a bone, a pin, or a nail, pain rather than suffocation is the consequence,

and the danger arises from the inflammation to be apprehended, if the body cannot speedily be removed. The most desirable mode of relief in this case will be by the withdrawal of the substance upwards, which will be attempted by the surgeon introducing the other end of the probang, which is always provided with a hook for that purpose; and as the danger in these cases is not so very pressing, I recommend you in every such accident, to put the patient into the hands of the medical practitioner.

When any foreign substance, solid or fluid, be it ever so small, as for example, a crumb of bread or a drop of water, passes into the windpipe, it immediately occasions distressing cough, and interrupted respiration from spasm of the muscles at the top of the windpipe, and this, as I observed before, is also called *choking*, but is altogether a different kind of accident from the one we have just been considering. The substance here is always small, and is usually a dry crumb of bread, or a drop of fluid, drawn accidentally into the windpipe in the act of inspiration, which frequently occurs from an incautious attempt at speaking whilst in the act of swallowing. Quietude on the part of the sufferer, and to refrain wholly from speaking, is all that can be recommended. It may be doubted whether the common practice of taking a little drink really does any good, but as it is unattended by any evil, it may be resorted to. When you reflect that the

offending matter is in the windpipe, and that the drink goes down the gullet, it is perfectly clear, that it cannot be washed down, as is commonly believed; still, however, it is possible, that the act of swallowing the drink may, by suspending for the time the action of breathing, allow the muscles of respiration to recover more readily from the state of spasm, into which they have been thrown by the irritation from the offending matter. With this view, therefore, the drink should be swallowed as slowly as possible, and with the same view a voluntary suspension of breathing, as long as can be done under these circumstances, tends to lessen and to shorten the state of distress. Nature, however, generally removes the offending cause by the efforts of the cough, which is invariably produced.

Paralytic patients are very liable to this species of choking, and I have known a large piece of food slip into the windpipe of such a person, and produce imminent danger of suffocation. In such an extreme case a surgeon, if at hand, would be justified in performing the operation of cutting an opening into the windpipe.

On the subject of POISONS I shall endeavour to avoid prolixity, and shall, therefore, notice only such as are the most frequently resorted to, either wilfully by the suicide, or intentionally by the murderer; or such as are most liable to be accidentally or by mistake taken into the stomach.

The suicide who decides upon poisoning him-

self, almost always selects either arsenic, corrosive sublimate, or laudanum. The same poisons are also sometimes taken by mistake; but a frequent cause of death in this latter way, particularly of late, has been the mistake of taking oxalic acid for Epsom salts. Poisoning from wilful adulteration of articles of diet, and from carelessness or ignorance in those who prepare our food, is most frequently occasioned by some preparation of arsenic, of copper, or of lead. The articles now enumerated are, therefore, what I shall more particularly notice, and shall conclude the subject by some cursory observations on a few other poisons.

The symptoms produced by *arsenic* taken into the stomach, are constriction of the throat, pain in the stomach and bowels, vomiting, and frequently purging, both evacuations being often bloody. The breathing also becomes difficult, the pulse small, hard, and quick, and the thirst incessant; the extremities are cold; and death is usually preceded by convulsions. No antidote to this poison has yet been discovered. The treatment consists in giving large quantities of sugar and water or linseed tea, with a view of promoting the vomiting, which is always present, and of sheathing the coats of the stomach; and then in freely and frequently washing out the stomach with the same mucilaginous fluids, by means of the stomach-pump. If the violent symptoms are subdued, which only takes place, however, when the

quantity of arsenic has been small, broth or other light diet may be given. The pains in the stomach and bowels which remain, call for the free application of leeches, and other treatment applicable to inflammation of these parts.

The means of detecting arsenic are various, but the following are most easy of application. Throw some of the suspected matter in a dry state upon red hot iron, and if arsenic be present, you will perceive an odour strongly resembling that of garlic. Draw a broad stroke upon white paper with the suspected matter in a fluid state, then draw a stick of lunar caustic over the moistened paper several times, and, if arsenic be present, the streak will assume a rough curdy and yellow appearance, which after a time becomes brown.

Persons recovering from an over-dose of arsenic, are sometimes left paralytic, and often with chronic inflammation of stomach and bowels.

The symptoms after taking *Corrosive Sublimate*, which is a preparation of mercury, are precisely similar to those from arsenic. The antidote is white of egg. Mix the whites of twelve eggs with a quart of water, beat them up, and give a wine-glassful every two or three minutes, so as to favour vomiting. If eggs are not at hand, give milk, or sugar and water in large quantities, till the eggs be procured. If vomiting has not yet been freely produced by the poison, or by the egg and water,

or other drinks taken into the stomach, the back of the fauces, or throat, should be irritated by the finger or by a feather, and an emetic of any kind that is at hand, should be given immediately.

The means of detecting corrosive sublimate will be understood by the following characters. When exposed to heat in its solid form, it is entirely evaporated. It is soluble in water, and still more so in spirits; and when a solution of it is added to a solution of ammonia, it is precipitated white, when to a solution of potash yellow, and when to lime-water orange.

We now come to the consideration of poisoning by *laudanum*, or other preparations of opium. This is frequently the means resorted to by suicides, and no doubt for this reason, that in certain doses it is known to produce sleep, stupor, and perfect insensibility. When taken, however, in sufficient doses to prove fatal, death is usually preceded by distressing spasms and horrible convulsions. Opium in its various forms, being in such continual use as a medicine, is the poison too, which is most frequently swallowed by mistake; its dangerous and sometimes fatal effects also from an over-dose are a frequent consequence of ignorance and rashness.

The symptoms of an over-dose, are drowsiness, stupor, and an unconquerable disposition to sleep; and if the quantity taken be sufficient to prove fatal, and no means of relief are resorted to, the state of stupor becomes so great, that no efforts are avail-

able to arouse the sufferer to consciousness; distressing sickness comes on at intervals, and violent contortions and convulsions at length close the scene.

To opium we have no antidote. The early treatment consists in evacuating the poison by emetics, and by the stomach-pump, and in arousing the patient to exertion by walking him about, and by every other means in our power; and further in the use of stimulating glysters, which will both rouse the patient, and expel such part of the poison, as may have passed into the lower bowels. The secondary treatment, which, be it impressed strongly on your mind, is not only not applicable, but is actually detrimental, till after the efforts made to evacuate the stomach and bowels have been effectual, is the frequent administration of a glass of lemonade or vinegar and water, and a cup of very strong coffee.

When, therefore, you are satisfied that a person has taken this poison, you will immediately give as an emetic, a scruple of white vitriol, or four grains of tartar emetic, if either are at hand; but if not, three table-spoonfuls of flour of mustard mixed with water, or as much common salt. In the mean time it is to be hoped, that the surgeon has been sent for with orders to bring that most useful and efficacious instrument the stomach-pump.

When by either of these means the stomach has been thoroughly emptied, and washed out, and

the bowels emptied by two or three copious cathartic glysters, you will proceed to give the acid drink or coffee every quarter or half hour at first, and then at longer and longer intervals, allowing the patient now to indulge in sleep in these intervals, if the propensity still continues.

We have no chemical tests, by which to prove the presence of opium; but the smell of it in the breath of the patient, and more particularly in the matter first thrown off the stomach, will frequently confirm the suspicions excited by the peculiarities of the symptoms.

There is an acid obtained by the chemical action of nitric acid on sugar, which was on that account called *acid of sugar*; it is now known by the name of *oxalic acid*. As sold in the shops under either of these names, it is a white crystallised salt, very much like Epsom salts in appearance, but intensely acid and acrid to the taste. In the dose of half an ounce, it has frequently proved fatal in less than an hour; and there is no doubt, but that a much less dose would destroy life. Another salt in crystals but of a brownish appearance, sold under the treacherous name of salt of lemons, is a compound of oxalic acid and an oxalate of lime, and is also a poison. Oxalic acid and acid of sorrel have been identified by the chemist, though procured by different processes, the latter having been long since manufactured in Switzerland from the juice of the sorrel.

This oxalic acid, or acid of sugar, or acid of sorrel, having been of late introduced into use in the cleaning of brass furniture, and still more frequently in the composition of a fluid for cleaning boot-tops, has been sometimes taken into the stomach by mistake; it has also been occasionally had recourse to for the purpose of suicide or murder. The mistake has always arisen from its very strong resemblance in appearance to Epsom salts. The taste will in a moment discover the mistake, or satisfy a doubt, when it arises, or prevent the occurrence of mistake, if constantly had recourse to by way of precaution before drinking off a dose of salts. The taste of oxalic acid is, as its name denotes, and as I have stated above, sour, and it is also acrid, whereas the taste of Epsom salts is a decided bitter.

The symptoms, after taking oxalic acid, are a burning sensation in the throat and stomach, often bloody vomiting, an extreme general debility almost amounting to paralysis, and a remarkably feeble and often imperceptible pulse; and when the dose is large death occurs in a few minutes, or in almost every such case within the hour. In some instances there has been numbness down the back, and in the lower extremities, and in others very acute pain in the same parts.

Should the mistake be immediately detected, the antidote is *magnesia* or *chalk*, which form with the oxalic acid insoluble and harmless salts; but not

so, be it well remembered, either potash or soda, for the salts produced by a combination of these with oxalic acid, are readily soluble and decidedly poisonous. Mix the magnesia or chalk with just sufficient water to make it drinkable, and give a wine-glassful every two or three minutes, till the patient has swallowed two or three ounces of the magnesia or chalk. Vomiting need not be excited, nor the stomach pump used, at least not till after the administration of the above antidote.

The best test of the presence of oxalic acid is lunar caustic. Boil the contents of the stomach, or the matter ejected from the stomach by vomiting, previously to the administration of the antidote, in water for half an hour; add some potash, and then filter through paper. To this solution add a few drops of a solution of lunar caustic; and, if oxalic acid has been present, you will have a dense white precipitate, which, when collected on a filter, dried, and heated, becomes brown on the edge, fulminates faintly, and is dispersed.

Copper, in its metallic state, is not poisonous, but some of its combinations are so; for instance, verdigris, which is a salt produced by the combination of vinegar with copper; and also the salt so well known in commerce under the name of blue vitriol, or copperas, which is a sulphate of copper, or a combination of copper with the sulphuric acid or oil of vitriol. The circumstance under which poisoning by copper generally takes place is by the

introduction of artificial verdigris or acetate of copper into the stomach with our food; this verdigris being produced in copper vessels not well tinned, or not at all tinned, when such are left with acid, or with greasy matter in contact, and are afterwards used in cooking without attention to cleanliness. The same substance is occasionally formed and taken into the stomach by the equally culpable negligence of leaving soups or stews in coppers, or copper saucepans, to cool, and to be cooked up again upon another occasion. Another cause of accident from copper is the practice adopted by many of putting copper coins into pickles and preserves for the purpose of improving or heightening their green colour.

The symptoms produced by verdigris thus taken, if the quantity be small, are pains in the stomach with sickness and vomiting, the matter thus ejected being acrid, often of a coppery taste, and sometimes of a greenish or blueish colour. If the quantity be larger, or the person who partakes of the food thus prepared, be of a naturally feeble constitution, or previously disposed to bowel affections, the above symptoms are much more violent in degree, the stools become bloody, spasms or cramps come on with cold clammy sweats, convulsions, and death.

The treatment consists in giving the whites of eggs, as recommended after taking corrosive sublimate; and in promoting vomiting by introducing

the finger down the throat, or by any ordinary emetic, if the symptoms arise soon after the poison has been taken, and by the use of the stomach pump as soon as it can be procured. Should the symptoms arise many hours after the suspected food has been taken, the white of eggs should still be given; cathartic, and then anodyne glysters, should next be administered; and, lastly, the treatment for ordinary inflammation should be adopted, as leeching, fomenting, &c.

Another preparation of copper, which acts as a poison in moderate doses, is, as I have before stated, blue vitriol or sulphate of copper. In the small dose of one or two grains it operates as an emetic; when taken in larger doses it produces the whole train of symptoms above described, and requires the same treatment.

The test of the presence of verdigris in any fluid is the addition of a small quantity of liquid ammonia, or of sal-volatile, which immediately occasions a pale azure-coloured precipitate, which is re-dissolved by an excess of the ammonia, forming then a deep violet-blue transparent fluid. An easy test of the presence of blue vitriol is a piece of polished iron. Pour boiling water on the suspected matter, and filter it through paper, suspend a key or the blade of a knife in the filtered fluid, and if copperas or blue vitriol be present, the iron will assume a coppery hue, and the fluid a greenish tint.

Poisoning with *lead* occurs more frequently

from accident than design, and seldom from any other preparations than white lead, and sugar of lead, each of these articles being in frequent use in the arts, and the latter being sometimes employed for fraudulent purposes. White lead is the basis of most of the paints commonly employed, and as it affects the human frame injuriously through the lungs and the skin, as well as when taken into the stomach, we often find manufacturers of white lead, plumbers, and painters, who are all much exposed to the fumes or emanations of white lead, and also to contact with it in the preparation and the use of their paints, seriously and sometimes fatally affected with the disease called painter's colic. The symptoms of this disease are frequent recurrence of colicky pains, at first slight, but afterwards intensely severe, with dry mouth, sickness, and vomiting of bitter matter of a dark green or almost black colour. Pains in various other parts are also very common, as in the arms and legs; and occasional sensations of numbness and muscular feebleness alternate with the pains. The bowels are usually costive, and the excrement is passed in hard round pellets, like that of sheep. To these symptoms succeed in most cases, sooner or later, either apoplexy, or partial palsy, particularly of the arms and hands, with a wasting of the flesh. The disease is frequent amongst painters, plumbers, lead smelters, colour makers, and other artisans, whose business leads them either to con-

stant exposure to the fumes, or constant handling of lead in any of its preparations; and the same symptoms are the consequence of the protracted use of wine, cyder, or any article of food that is impregnated with this metal.

Should you ever be called to a person labouring under a sudden attack of painter's colic, you must resort immediately to purgatives and anodynes in full doses; an ounce or more of Epsom salts, or an ounce and a half of castor oil in the first place, and a quarter of an hour afterwards a small tea-spoonful of laudanum; but should the salts or the oil be rejected, give the laudanum immediately, and repeat the purgative in half an hour.

Sugar of lead, which is an acetate of lead, is said to be frequently used to diminish the acidity of light wines, and also in the clarifying of wines and spirits. Goulard's lotion is also an acetate of lead in a liquid state; and these preparations are therefore the occasional sources of poisoning by lead, either through ignorance or mistake. When a large dose of these or other preparations of lead is taken into the stomach, it produces sickness, vomiting, and violent pains both in the stomach and bowels, like an over-dose of corrosive sublimate, or other metallic irritant.

The antidotes are sulphate of soda or Glauber's salt, sulphate of alumine or alum, and the carbonates of potash or soda, which should be therefore administered freely in an abundance of warm water,

and if they do not speedily produce vomiting you may give, as an emetic, the sulphate of zinc or white vitriol, the proper dose of which is a scruple.

A substance called *Barytes* or *Baryta*, has of late been much used to poison rats. It is a white ponderous earth, usually sold in powder. It is very poisonous, and being, as I before stated, frequently called for, may become the source of poisoning by accident or otherwise. The symptoms produced by taking barytes are, a sense of burning in the stomach, vomiting, griping, purging, paralysis, convulsions, and death.

The antidote is either Epsom or Glauber's salt, of which somewhat more than the quantity of barytes taken will by chemical decomposition and recombination produce an insoluble and inert salt, which will pass off by the bowels. Should the poison, however, have been taken long enough to produce pain and sickness, besides giving a full dose of salts dissolved in water, you should order mild mucilaginous drinks, as milk, barley water, &c.: and not omit to use the stomach pump as soon as it can be procured. In addition to which you must also apply leeches to the stomach, and use every other means for subduing inflammation.

The berries of *deadly nightshade* have often been gathered and eaten by children. They produce nervous tremors and symptoms resembling intoxication, as well as vomiting and griping, and the pupil of the eye becomes remarkably dilated. If

the quantity eaten be sufficient, and a very few berries will be sufficient, the above symptoms are soon succeeded by convulsions and death. The treatment consists in the immediate administration of an emetic or the use of the stomach pump, then a brisk cathartic, and lastly repeated doses of vinegar, as recommended after opium. Nearly the same symptoms are produced by hemlock, thorn apple, and tobacco, and a similar treatment is called for.

Mussels and some other fish have been occasionally known to disagree, producing sickness, giddiness, swelling of the face with an eruption like the nettle rash; and sometimes more alarming symptoms, as violent pains in the stomach and bowels, convulsions, and even death. The treatment is an emetic, a purgative, then twenty or thirty drops of ether on a lump of sugar; and if the distressing symptoms have not soon subsided, ten or fifteen drops of laudanum may be given in a little brandy and water.

It is well known that many species of *mushroom* are poisonous, the symptoms produced by them are pain of stomach and bowels, thirst, vomiting, fainting fits, convulsions, and death; at other times tremors, drowsiness, deep sleep, and paralysis. These various symptoms will sometimes show themselves in a few minutes, or perhaps in an hour or two; but at other times not till the next day. Emetics, the stomach pump, and then purgatives must in every such case be assiduously employed.

After the offending matter may be supposed to have been evacuated, mucilaginous drinks, fomentations, and leeching will be required, if pain and soreness remain in the stomach and bowels; but ether and laudanum in brandy and water if cramp, convulsions, or tremors continue.

We shall now take a slight review of the subject of poisons, with a view of impressing it strongly on your mind. When called to a person, who has been suddenly seized with vomiting and violent colicky pains, particularly if neither cholera nor bilious fever prevail at the time; or if your patient is in a state of stupor with quick breathing, dilated pupil, and a full quick pulse; be alive to the probability of something deleterious or poisonous having been taken into the stomach; and if your inquiries raise suspicion in the minds of others, use your best judgment in pursuing the investigation. If any poisonous substance has been taken by mistake, you will in all probability by the assistance of the patient or his friends soon make the discovery, and ascertain the nature of the poison. If it has been taken with suicidal intentions, the deluded patient, if able to communicate, will, very generally, under the pressure of his sufferings, and probable alteration of his views, disclose the secret, and acquaint you with the nature of the poison he has swallowed. Should the secret, however, be not thus disclosed, search made by an attendant, whilst you are taking the first steps to relieve the patient,

will frequently lead to the discovery of the phial, the cup, or the paper, which had contained the poison, and which may still retain sufficient traces of it for the detection of its nature. In the next place, attention to the matter vomited will occasionally give you the required information; laudanum for example, or other preparations of opium, will be detected by the smell. White arsenic, if taken in large quantities, will frequently be seen in small particles amongst the more solid matters first ejected; in which case this matter should be thrown into a basin of clean water, and stirred about, and, if any white particles of matter speedily subside, they should be carefully preserved for further examination. The same observations will apply to white lead, corrosive sublimate, barytes, and indeed to any poison that is but little soluble, or that has been taken in large quantity. Many other poisonous substances, as the nightshade berries, mushrooms, verdigris, or other preparation of copper; oxalic acid, or essential salt of lemons; sugar of lead, or as it is sometimes called, extract of saturn, or goulard, the common name for a liquid preparation of the same sub-acetate of lead; or barytes, the white earthy powder now much employed in the destruction of vermin; may at once be detected in the matter thrown up from the stomach.

In all cases of poisoning, endeavour first to ascertain whether the poison taken is one of those for which an antidote has been discovered; and

that you may under such circumstances have immediate recourse to the one that is appropriate, and to impress this part of the subject more strongly on the memory, I here place the poisons and antidotes in a tabular form.

<i>Poisons.</i>		<i>Antidotes.</i>
Corrosive sublimate		White of eggs.
Verdigris		White of eggs.
Oxalic acid	}	Magnesia
or		or
Salt of lemons.		Chalk.
Sugar of lead	}	Glauber's salts
or		or
Goulard.		Carbonate of potash
		or
		Carbonate of soda.
Barytes	}	Glauber's salts
		or
		Epsom salts.

If the antidote is not at hand, endeavour to excite vomiting immediately, but still procure and administer the antidote as speedily as possible.

In all other cases of poisoning, that is from substances for which antidotes have not been discovered, if sickness and vomiting are present, promote it by copious draughts of warm liquids, and let these be of a bland mucilaginous kind, as sugar and water, barley-water, thin gruel, or linseed-tea; particularly where the poison has produced pains in the stomach and bowels, and bloody evacuations. When the poison has not produced vomiting, an emetic is the

first thing to be thought of; and, if the patient is in a state of stupor or drowsiness, it must be a very strong one, as four grains of tartar emetic, twenty grains of white vitriol, two grains of blue vitriol, or half a dram of ipecacuanha; if none of these be at hand, two or three table-spoonfuls of flour of mustard in a pint of warm water may be given, or the same quantity of common salt. The vomiting may frequently be expedited by putting the finger down the throat, or by tickling the back of the fauces, or root of the tongue with a feather. It may here be observed that the stomach pump is applicable in every case of poison taken by the mouth, except where an antidote is at hand; and even in these cases too, if symptoms of recovery do not satisfactorily show themselves after the administration of a reasonable quantity of the appropriate antidote. It will be your duty, therefore, invariably to send for the nearest surgeon, with instructions to bring with him this inestimable contrivance, the use of which and the after-treatment of the patient will be, of course, confided to his management.

LETTER VIII.

ON FITS, OR SUDDEN SEIZURES. FAINTING FITS,
 CONVULSIVE FITS, HYSTERIC FITS, ST. VITUS'S
 DANCE, EPILEPTIC FITS, APOPLEXY, PALSY, IN-
 SANITY, DELIRIUM TREMENS, ANGINA PECTORIS,
 ASTHMA.

MY DEAR SON,

THE term FIT is in common parlance applied to almost every sudden seizure, either of bodily or mental ailment; as a fit of apoplexy and a fit of ague. I shall, however, not include the latter in the present group, because it properly belongs to fevers; and I shall as in former letters, bring together certain diseases connected by similarity of symptoms, as fits of convulsion and St. Vitus's Dance, although the latter cannot properly be called a fit. We shall now treat the subject in the order adopted as the heading of this letter, and you will at once perceive, that it includes a great variety of maladies, in which your judgment is likely to be called upon to direct the early treatment, and in which, to do this promptly and discreetly will often be to save life.

Syncope or fainting, as the consequence of loss of blood, has already been spoken of; but *fainting fits* are very common under a variety of other circumstances, and particularly in persons debilitated

by long continued disease or otherwise, when such persons attempt to make some exertion beyond their strength. There are many persons, who, from some slight organic defect, congenital or not, about the heart or large vessels, are particularly liable through life to faint or swoon away upon very trivial occasions of either bodily exertion, or mental agitation. Others, again, from some peculiar idiosyncrasy, independent of any organic affection, and often from some mental association, faint away upon exposure to certain sights, odours, or sounds, as the sight of blood, the smell of fragrant flowers, the noise of trumpets or cannon, or the harmonious sound of a grand orchestra of music.

Fainting is easily distinguishable from other fits. Its symptoms are paleness of countenance, pulse and action of the heart very feeble if not altogether imperceptible, respiration so slight as scarcely to be perceived, loss of consciousness with absence of convulsions except in some cases at the moment of recovery from the swoon. After a longer or shorter interval, from a minute or two to some hours, perhaps, with only occasional partial recoveries, consciousness gradually returns with slight motions of the lips and eyelids, sighing, more distinct breathing, and almost always with a general and copious perspiration.

The treatment consists in placing your patient in the horizontal posture on a bed, a couch, or on the floor, in dashing cold water over the face, admitting

cool air, stimulating the nostrils with volatile salts, burnt feather, or common snuff, and in applying mustard plasters for a few minutes to the soles of the feet, or inside of the legs, if the syncope lasts long, and is not relieved by the other expedients. As soon as the patient is able to swallow, you may give a little cold water, either by itself, or having in it a teaspoonful or two of sal-volatile, or the same quantity of spirits.

Convulsions frequently occur as symptoms of other diseases, as of Tetanus, Hydrocephalus, Hydrophobia, &c, and they constitute an important part of others, as of Epilepsy, Convulsive Hysteria, St. Vitus's dance, &c. but in treating here of *convulsive fits*, it is my intention to confine myself to sudden seizures of spasm, or in other words, of involuntary contraction and relaxation of muscles, more or less general, not necessarily connected with other diseases, and differing from epilepsy in not being followed by stupor, and in not recurring periodically.

The disease, as thus defined, is almost entirely confined to infants and young children, and is usually induced by some irritation either in the gums from teething, or in the stomach or bowels, from undigested food, worms, or unhealthy secretions; or by irritation of the system generally on the accession of some important eruptive disease, as scarlet-fever, measles, or small-pox.

I need not more particularly describe the symp-

toms, as you can never be at a loss in deciding the presence of a convulsive fit, after having once witnessed it. I may, however, apprise you that the term *inward fits* is unmeaningly applied by nurses to all inexplicable cases of infantile distress; and that it conveys no precise notion, unless when applied, as it sometimes is, to those minor and partial convulsions, in which the involuntary action of the muscles of the face produces a twittering of the lips and eyelids, and an unnatural distorted expression of the features of the face; and then, be it remembered, it is often the harbinger of more general convulsions. Neither will it be necessary for me to attempt to discriminate between simple idiopathic convulsive fits, dependent upon the causes above mentioned, and the convulsions accompanying water in the head or other serious cerebral disorder, as it is only on the emergency of the sudden seizure that you can with propriety undertake to direct the treatment, and these latter important cases will, it is hoped, have already been taken charge of by proper medical attendants, before convulsions have been added to the catalogue of other symptoms.

When called to a case of infantile convulsions, the remedies to be immediately resorted to are few indeed. The warm bath is the only one, which can with propriety be recommended in all cases. When a sufficient quantity of hot water is not at hand, as soon as a small quantity can be procured,

the child may be wrapt in a blanket wrung out of this, and covered with another dry blanket, till the bath is prepared. The heat of the wet blanket must be somewhat under that which can be borne by the back of your hand with comfort. When the bath is ready, immerse the child in it at a temperature of 98° or 100°, and let him remain in it half an hour, if he does not sooner faint away.

During the preparation and administration of the bath you will make those inquiries, which may lead to the discovery of the probable cause of the attack. If the child has been sick, and if you find that the food has been improper, either in quantity or in quality, or if the child is at the breast of a nurse who is out of health, you may conclude that the stomach is the seat of irritation; if the legs of the child are drawn up, if he has been previously cross, and still cries in the intervals of the convulsions, and if the bowels be either unusually costive, or the reverse, with motions of an unnatural appearance, you may infer that the irritation is in the bowels. In both these cases you will do well to order a purgative glyster, which may be given either before or whilst the child is in the bath. It may consist of a tea-spoonful of castor-oil, or an ounce of senna-tea in a tea-cupful of gruel for an infant under a year old, or, if these be not at hand, of a tea-spoonful of common salt, and another of brown sugar in the same quantity of gruel. To a child between one and two years old, double the

quantity of the above ingredients may be administered, and to a child of four or five years three times the quantity. Soon after the glyster I advise you to give a dose of calomel and rhubarb; but I am far from recommending the frequent repetition of this dose without professional sanction. One grain of calomel and four of rhubarb may be given to an infant, double the quantity to a babe a year or two old, and three or four times this dose to children above five.

If the age of the patient lead to the suspicion of teething, you must not fail to examine the mouth, and should you find the gums hot and swollen, you should lose no time, but proceed immediately to lance the gums yourself, if you feel competent, or else send for the nearest surgeon. An incision with a lancet through the skin down to the rising tooth, requires but little skill; and, after having once or twice seen it performed by a surgeon, you need not be afraid to undertake it yourself.

Should the child be of a fat and gross habit, should the turgescence of the countenance be considerable during the fits, with protruding and perhaps blood-shot eyes, and should these appearances not subside in the intervals, general bleeding is desirable. If a medical man be at hand, an ounce or two of blood should be taken from the jugular vein; but if not, and if, from the smallness of the vein in the arm, or, as very frequently happens in fat children, from the vein being too deep-seated to be

discerned, you are unable to adopt a general bleeding, you will do well to apply two, three, or four leeches to one of the temples. I say to one of the temples, because I have always found the bleeding by leeches in children so much more conveniently managed, when all the leeches are applied to one spot, and the general effect upon the circulation is the same. It may be computed that each leech on an average draws half an ounce of blood, including the oozing after the leech has done sucking.

If the convulsions have recurred several times, and irritation is suspected to be in the bowels, from five to ten drops of laudanum in a tablespoonful or two of gruel should be administered by way of glyster in the first instance, and then the calomel and rhubarb given by the mouth; or, if there be any obstacle or objection to the glyster, two, three, or four drops of laudanum may be given with the purgative medicine.

I would further observe that in all cases of convulsions in infants, or young children, if the fits recur after the warm bath, the purgatives and the bleeding, anodyne medicines may with propriety be resorted to.

These are all the directions which I think it necessary to give for the immediate treatment of convulsive fits in very young children; and the after management, with a view to obviate recurrences, should always be directed by professional men.

When convulsions occur in children more than three or four years of age, our attention should be more particularly drawn to the state of the stomach and bowels. They are frequently the immediate consequence of some recent indiscretion, either in the quantity or quality of the food, in which case an emetic ought, of course, to be the first thing administered, and then a brisk purgative. If no such indiscretion has been recently committed, we may frequently, in such cases, be led to the suspicion of irritation in the bowels from undigested crudities, which will be best removed by a full dose of calomel and jalap, four or five grains of the former with ten or twelve grains of the jalap.

A word or two may not be misplaced here as to the best mode of administering these drugs to children of this age, as it is often a matter of some difficulty to do it, either by force or persuasion. The calomel, either alone or with a little sugar, may be given between two thin slices of bread and butter without detection, and the jalap will be altogether disguised, given in a little coffee sweetened with brown sugar.

Should our inquiries lead to the suspicion of worms as a source of irritation, the appropriate remedies, hereafter to be spoken of, must be had recourse to.

It has before been stated that convulsions occasionally usher in the eruptive diseases, as scarlet fever, measles, and small-pox. This must be more

particularly had in view with patients of the age we are now contemplating, and when such diseases are prevailing. Under such a suspicion an emetic may be first given, and then a purgative.

When a young woman is suddenly seized with convulsions, particularly if induced by terror, not an uncommon occurrence, you may consider the case as one of convulsive hysteria. And when adults of either sex are attacked with convulsions, attended with foaming at the mouth, and succeeded by stupor, particularly if they are subject to such attacks, you may consider the disease as epilepsy; which diseases will be treated next in order.

HYSTERIA, *anglicè* Hysterics, is described by medical authors as a very Proteus, imitative of almost every other disease in the nosology. Very learned physicians have written histories of its imitative powers, and have attempted to describe its anomalous varieties; and celebrated surgeons have of late gone so far as to speak and write about hysteric knees, and hysteric breasts. It does not require much sagacity to foretel, that all this will, in a few years, be deemed arrant nonsense; and to have thus huddled together an immense variety of distinct disorders, under the title of Hysteria, will be deemed, and truly so, a proof of ignorance. What these learned and celebrated gentlemen have written on this subject will then, in the estimation of some, detract from the high renown they have so deservedly attained by

their general discernment and practical improvements. I would, however, rather say, that to have drawn distinctions between certain neuralgic or certain inflammatory diseases for instance, and those at present anomalous disorders which resemble them in many points, but not in all, was necessarily the first step towards giving a decided character and appropriate place in nosology to the latter; and that to have made a proper diagnosis between the destructive disease in the joints, long known by the appellation of white swelling, and the equally painful and sometimes swollen state of the same structures, lately designated (erroneously I will allow) hysterics, will deserve to be considered the first important step towards understanding the true nature, and attaining to the proper treatment of this latter disease, which will, I apprehend, soon receive an appropriate name and suitable place in our nosology, as distinct from hysteria properly so called, as from white swelling.

True however it is, that the symptoms of hysteria are various; indeed the hysteric fits of scarcely two patients are precisely alike; one shrieks, another sings and dances, a third is continually in partial swoons, and a fourth laughs and talks nonsense: at least these are the prominent symptoms in particular cases.

I shall, therefore, in this little work, adapted only for unprofessional readers, do no more than describe the symptoms, and give the treatment of

hysteric fits as they most frequently occur, and these I shall divide into simple and convulsive.

I have before stated that these fits occur almost exclusively in young females; when therefore you are called to such a person, and find her in a half-conscious state, but unable to control her actions, throwing herself about unmeaningly into all sorts of attitudes, sobbing, sighing, choking with the sensation of a ball in the throat, laughing and crying in turns; at one moment quiet, apparently unconscious, and approaching to syncope, and then suddenly starting upon her legs, or screaming as with sudden pain, or bursting into laughter, you may make up your mind to its being a case of *simple hysterics*; you may dismiss all fear as to its result, and proceed to treat it in the ordinary way, by dashing water plentifully in the face of the patient, speaking to her sharply, but not in real anger; for though the stern manner of a stranger or superior may enable her to control her actions in some degree, and thus to shorten the fit, it is incorrect to suppose that a female, in the paroxysms of such a fit, can by a voluntary exertion shake off the symptoms; though I will admit that if she be subject to such attacks, she may sometimes prevent their occurrence when forewarned of their approach.

The only other remedial means to be had recourse to during the paroxysm, are the application of volatile and fetid odours to the nostrils, as of

burnt feathers, hartshorn, or the volatile spirits of assafetida, and the giving to drink a little cold water, or hartshorn, or sal volatile in water. It is advisable too, where it can be safely done, to leave the patient on the floor, or on the bed, apparently neglected or unattended to; for there is usually consciousness enough to be aware of this circumstance, and there will often be much more disposition to shake off the symptoms, if not violent, when the friends display this indifference.

The exciting causes of hysteric fits are chiefly the various affections of the mind, as fear, terror, pleasing excitements, sudden joy, anxiety, or distress of mind. And the proper preventive treatment consequently is the regulation of the mind, and avoidance of the above mental affections in their excess.

Convulsive hysterics are much more alarming in appearance, a source of greater suffering to the patient, and of greater distress to her friends. The fit sometimes comes on suddenly, and the first attack is frequently the effect of sudden fright; sometimes the fit is preceded by a fixed local pain in the side, in the head, or one of the extremities, and a person already the subject of such fits may be thrown into a paroxysm by any sudden affection of the mind. The convulsions are sometimes partial, as of an arm or leg, but frequently general, distorting the whole frame, sometimes accompanied with loud screams, sometimes with incoherent talking,

and at other times with fits of laughter. The convulsions are often so strong as to require three or four stout persons to prevent injury. The distinctive characters of these fits are, that the patient is occasionally, if not at all times, conscious of what is said, and knows the persons who are about her: that the action of the heart is not much disturbed, the pulse being frequently quite natural: that the breathing, though occasionally hurried during the convulsions, is in other respects perfectly natural, and, in the intervals of the convulsive paroxysms, altogether natural; and that the pupil of the eye is not permanently dilated, or remarkably contracted.

The treatment may be the same as in simple hysterics, with the addition of mustard plasters to the feet or ankles, the administration of an assafetida glyster, and, if the convulsions are strong and lasting, a general bleeding from the arm, provided, I should add, the patient is strong and healthy.

Whoever has once witnessed the strange gesticulations and involuntary motions of a person labouring under CHOREA, or ST. VITUS'S DANCE, can never afterwards be at a loss to recognise the disease. The patient is usually a boy or a girl, of from five to fifteen years of age. The disease comes on gradually; it shows itself at first by occasional jerks or involuntary motions of an arm or of a leg, and by occasional slight distortions of the muscles of the face. In a few days or weeks it is observed that the child walks unsteadily, that his gait is awkward,

that, in advancing, one leg almost crosses the other, and that one or both arms are at the same time tossed about irregularly and involuntarily. In a majority of cases these irregular muscular contractions occur only in the limbs of one side, or at least most prominently on one side of the body; and the distortions of the face are either confined to, or are most remarkable on the same side. As the disease advances, the little patient has considerable difficulty in feeding himself, for, in lifting anything from the table and raising it to his mouth, the action is irregular, and the motion consequently not in a straight line; the spoon or fork misses the mouth, or the fluid from the cup is spilt, and it is not till after many vain attempts that the object is at last attained. These involuntary actions, however, may, in some cases, be arrested for a short time by fixing the patient's attention to some interesting object, and they usually cease altogether during sleep. From the commencement of the complaint the general health is impaired, and as it advances the patient grows pale and thin; the appetite is precarious, or altogether fails; the temper becomes fretful, the usual animation disappears, and the child becomes indifferent to its customary sports. Should the proper medical treatment not be adopted, worse consequences may sooner or later ensue, for patients thus neglected are sometimes seized with paralysis or epilepsy, and at other times they sink gradually into a state of idiocy.

In the early stage of the complaint, however, great hopes of perfect recovery may be entertained. Brisk purging is first to be resorted to; and as Chorea is sometimes dependent upon, or combined with irritation in the bowels from the presence of worms, I generally have recourse to the use of oil of turpentine, our best worm medicine, with the early doses of purgatives; thus I order of the rectified oil of turpentine, or, as it is sometimes called, spirits of turpentine, from half an ounce to an ounce, according to the age of the little patient, in the same quantity or a little more of either gruel or water, early in the morning, the patient being desired to remain in bed an hour or two afterwards; and the following morning I give a full dose of calomel and jalap. If worms are discharged, I repeat both doses in the same manner after an interval of three days; and if no worms are discharged, I repeat the calomel and jalap only, but persevere in its use on alternate days for two or three weeks, if the evacuations do not assume an uniformly healthy appearance in a shorter period, which is seldom the case. If there be headache, it will be advisable to apply leeches to the temples occasionally during the course of purgative medicines. If the disease be not entirely subdued, or very materially mitigated, by this practice, I now prescribe steel and bark, and the use of the shower-bath, still, however, administering a powerful cathartic every third or fourth day. In cases of such a degree of seve-

rity and duration, it is presumed that regular professional aid will have been called in to direct the details of this course of tonics. Exercise in the open air, amusing occupations, and cheerful society, are important adjuvants; the diet should be plain but generous, and an overloaded stomach must be carefully avoided. This treatment very seldom fails, but where it does, I would suggest to the medical attendant a continued course of calomel and rhubarb, in *moderate* doses, twice a day, with an occasional full dose, but without the steel and bark; the former to be perseveringly persisted in with the double view of moderate purging, and of affecting the system with the mercury; a plan of treatment which I have known to succeed in very obstinate cases.

EPILEPSY, or the falling sickness, comes next to be considered; and as the sad sufferers under this affliction in the humbler walks of life are very frequently abandoned to their fate, as regards professional assistance, your kind offices will frequently be required, or I should rather say, that your sympathy for their sufferings will frequently excite in you a strong desire to try the efficacy of remedial measures. This disease frequently occurs in infancy and early childhood, and when the patient survives the first attacks, it sometimes becomes habitual or constitutional through even a long life. The peculiarities of an epileptic fit are strong general convulsions, coming on suddenly, sometimes with a

violent scream, always with immediate loss of consciousness; sometimes, however, preceded by a momentary warning of either giddiness, local pain, or slight partial convulsions. The patient usually foams at the mouth, and the froth is often bloody from the accidental biting of the tongue or lips, during the convulsive closing of the teeth. The eyeballs protrude, and are frightfully distorted; the whole countenance is generally turgid and livid. The convulsions and distortions after a longer or shorter period subside, consciousness slowly returns, and a state of drowsiness, stupor, and sometimes of sound sleep, succeeds, lasting in a greater or less degree for many hours.

The epileptic fit may, however, be of every degree of violence, from a momentary loss of consciousness, and the slightest possible convulsions, and with so sudden a recovery, that the patient himself is scarcely conscious of its occurrence, to that appalling degree of universal spasm and distortion, and temporary annihilation of intellect, which seems to threaten instant destruction; and one such paroxysm may last for hours, or one of much shorter duration may be quickly succeeded by others for many hours together.

As various also may be the permanent effects of repeated attacks of epilepsy. One patient will retain through life his wonted brilliancy of intellect and full corporeal powers, whilst another will gradually dwindle into idiocy, and premature decrepitude.

The most frightful and alarming attacks of epilepsy occur in childbed, either immediately before or during delivery, and it is then called puerperal epilepsy, or puerperal convulsions.

After this short description of a very formidable disease, we now proceed to the treatment of it. When called to witness an attack of epilepsy in an infant or very young child, immerse the patient as speedily as you can in a warm bath, apply leeches to the temples, give a brisk purgative of calomel, rhubarb, and magnesia, and promote its operation by the immediate administration of a glyster. When sufficient hot water is not at hand for the purpose of a bath, wrap the little patient in a blanket wrung out of hot water.

When the patient is an adult, first loosen the usual wrappings about the throat, place him in a situation and position in which his convulsive motions will inflict the least injury, and endeavour to restrain them as far as may be done without violence. If there is an opportunity of inserting a roll of linen, or a wedge of soft wood between the teeth, it will prevent injury to the tongue. Cold water should be dashed in the face, and cold air admitted freely, if the room be close and hot. If the patient has had but few previous fits, you may proceed to bleed him, and more particularly if any person present informs you that on former occasions it has proved of service. Nothing more than I have now advised can be done for the patient's immediate

relief, and I would here caution you against interfering in any way with the gradual and natural subsidence of the symptoms, the consequent state of drowsiness or sleep, and the progressive restoration to consciousness.

If you are requested, as will frequently be the case, to suggest some preventive plan of treatment, you must take the particular case into full consideration, and promise to do the best you can; but I think it my duty to apprise you, that in old and confirmed cases of epilepsy, our confidence in medicine is not great, and that the efficacy in various drugs, highly extolled by particular authors, is so uncertain and precarious, that our practice is more empirical in this than in almost any other disease. I will, however, give you a few general directions as to the management of such patients, and then describe the routine of practice, which I myself adopt, when confirmed cases come under my care, assuring you at the same time, that although I find many cases benefited, and some ultimately cured, I can never say *à priori* which of my remedies is most likely to succeed. We are on that account not warranted in desisting from medical treatment, until the whole of this or some such routine has been assiduously worked out.

The diet of an epileptic patient should be plain, light, and nutritious; meat in moderation once a day, but not savoury or high seasoned; milk, or milk-porridge night and morning; no beer, wine,

or spirits. A great deal of moderate exercise in the open air, with moderately warm clothing, is desirable; heated and crowded rooms are to be avoided. The patient should sleep in an airy room, with his head and shoulders elevated, and without a night-cap; and he should daily souse or well wash his head with cold water in the summer, and with tepid water in the winter, taking care to rub it thoroughly dry with a coarse towel; and he should wear a light cap or hat. He ought also to pay as much attention to the keeping of his feet warm, both by day and night, as to keeping of his head cool.

If an epileptic patient is subject to the headache, particularly if headache usually precedes a fit, much advantage may be expected from cupping between the shoulders, or the application of leeches to the forehead or temples; and when it has been observed that the fit recurs at stated intervals of two, three, or four weeks, the patient also being tolerably robust, such local bleeding is to be resorted to a few days previous to the expected attack.

In some cases a fit is always preceded, or rather ushered in, by an unpleasant or painful sensation in a distant part, which more or less rapidly rises to the head: this is termed the epileptic aura; and when there is time for the application of a tight bandage above the seat of this morbid sensation, the fit has occasionally been thereby prevented.

In other patients, a severe local pain of a more

permanent character, or the spasmodic contraction of a finger, or the clenching of one fist, or the successive closing of the fingers, first of one hand, and then of the other, precede every attack of epilepsy, and particularly in cases of a mixed character, partaking both of convulsive hysteria and epilepsy. In such instances, particularly of local pain, I have occasionally put off the fit by taking away a small quantity of blood, (sometimes even an ounce or two has sufficed,) but I do not advise a frequent recourse to even this small abstraction of blood, as the necessity for it seems to increase by its adoption. I once had a case partly under my care, where severe hysterico-epileptic attacks were almost invariably preceded by an acute pain under one breast, and where it was found after some continuance of the disease, that the opening a vein in the arm, so effectually and so instantly removed the pain, and prevented the fit, that the patient, before consciousness left her, so earnestly entreated to be bled, that it was seldom resisted, and the necessity occurring more and more frequently, she was bled to a few ounces three or four times a week, until general dropsy was the consequence.

In other cases of a similar character, particularly where successive contractions of the fingers indicated the approach of a fit, I have often given a full dose of opium with advantage; but this practice, as well as the bleeding, I only recommend as an occasional means of breaking the chain of symp-

toms, and thus affording an opportunity of pursuing uninterruptedly the preventive course of medicine now about to be laid down.

The only medicines which I shall mention under this head, are spirits of turpentine, lunar caustic, and ammoniated copper. I might enumerate a long list of active medicines equally well recommended, and each of which has occasionally succeeded; but I shall confine myself to the above, as constituting the routine I myself almost invariably adopt in my public practice, and beyond which, if they all prove unsuccessful, I very seldom find the patience of the invalid or of his friends at all willing to persist.

Of those medicines which I have selected, I am constrained to admit that I cannot *à priori* in any particular case give the preference to either, unless, indeed, I have reason to suspect the presence of worms; that is, if the patient, for example, be under the adult age, have a tumid abdomen, and if his appetite be irregular and capricious; in which case I decidedly prefer the turpentine, and begin with it in large doses, alternating it with brisk cathartics.

After three or four such doses, or without this previous treatment, where worms are not suspected, I order about twenty drops of the oil of turpentine in either a mucilaginous mixture, or in simple peppermint water, three times a day. If the fits abate in frequency or violence, I persevere for an inde-

finite period ; but if no benefit be derived from its use after five or six weeks, I desist, and commence the use of *argentum nitratum*, or lunar caustic made into pills with the crumb of bread, each pill containing one-eighth of a grain. I begin the course with one pill three times a day, and after a few days I increase the dose to two pills, then to three, and lastly to four pills for a dose. This remedy may be persevered in without fear, and without any particular precaution, for one, two, or three months ; or as long indeed as it has a decided influence in mitigating the paroxysms, and lengthening the intermissions. Should no such beneficial result ensue, I seldom persist in its use more than a month or six weeks, after which I have recourse to my third remedy, the *ammoniated copper*, *cuprum ammoniatum*, beginning with half a grain three times a day : this also is best administered in the form of pills ; the dose may be increased, and its use persisted in, according to the rules laid down for the last medicine.

I shall conclude my description of this empirical practice with the observation, that when one of these remedies, having at first displayed evident good effects, ceases to produce further benefit, I substitute another for a time, and then return to the former, and in this way I have sometimes rung the changes on these three remedies for many months with decided advantage, and occasionally cured my patient by means of all of them, when one would not have accomplished the purpose.

I am now about to treat of another most appalling sudden seizure, or fit, as it is usually called, which differs from epilepsy, even when this latter occurs in its severest grade. Unlike epilepsy, it frequently proves fatal in its first, second, or third attack, sometimes immediately, at other times after a few hours. In its ulterior consequences, when not fatal, it also differs from epilepsy in leaving its victim greatly shattered either in intellect or in corporeal powers, or in both. You will readily understand that I am alluding to APOPLECTIC FITS, or APOPLEXY. The suddenness of the seizure has also assigned to it another name, particularly when the patient survives the first danger, and is left with corporeal and mental powers much impaired, the lower class always designating such a sufferer *planet-struck*.

A person apparently in good health is seized suddenly, perhaps in his bed unconsciously whilst asleep, or he falls suddenly back when sitting in his chair, not unfrequently whilst at his meals, or soon after his dinner; or he falls as suddenly to the ground, when walking or riding, in a state of perfect insensibility: if not instantly deprived of life, which is sometimes the case, he lies motionless and powerless, with stertorous or noisy breathing, sometimes with eyes partly closed, but oftener staring or protruding, and his face and neck livid and swollen.

This state is distinguishable from epilepsy by

the absence of convulsions and contortions of the body, by a full and slow state of the pulse, and the noisy breathing. The patient is insensible to noises, incapable of motion, and the pupil of the eye, which is usually much dilated, does not contract when exposed suddenly to a strong light. The condition of the patient very much resembles the temporary annihilation of sense and motion in beastly intoxication, from which indeed it is sometimes very difficult to distinguish it, when information on this point is not attainable from his companions. It may, however, here be observed, that the pulse in a drunken man is often quick, and never preternaturally slow, and that the smell of the breath and the nature of the matter brought off the stomach, for sickness usually attends this state of intoxication, will often detect the cause of his insensibility. Let it, however, be remembered that when intoxication proves fatal, it is often by inducing apoplexy.

The seizure, as I have now described it, when not speedily fatal, may still prove so in a few hours or a few days. In such severe cases it is often accompanied with paralysis or loss of power on one side, or in one limb, with either total loss of speech or very imperfect articulation, which state of paralysis only becomes apparent on the subsidence of the total insensibility which accompanied the first seizure.

An apoplectic attack, however, is not always

sudden, and the seizure in its severe form has usually been preceded by minor attacks, or by well-marked premonitory symptoms, such as severe darting pains in the head, giddiness, flashes of light or sparks before the eyes, somnolency with an unusual degree of snoring when asleep, momentary loss of consciousness, forgetfulness of words, particularly of names of persons and places, and also prickling or numbed sensations, cramps, or even temporary paralysis of a finger, a hand, or an arm. When such symptoms occur in persons of full habit, and florid or purplish complexion, with short neck and a strong bounding pulse, we have the greatest reason to apprehend sooner or later a formidable attack of apoplexy, and particularly so, if such a person will persist in the indulgence of high living.

Whether the severe attack of apoplexy above described has been sudden and unexpected, or has been preceded by some of the usual warnings, its graver symptoms having subsided, or been subdued by vigorous medical treatment, the paralytic state remains, the speech is imperfect, the temper is become irritable, the memory is impaired, and all the functions of the mind are more or less affected. The future improvement in such cases is slow, as regards both the corporeal and mental lesion, and the amount of permanent recovery varies in every possible degree.

I would further observe, that the *paralytic symp-*

toms sometimes come on suddenly without the general apoplectic symptoms; that is, a person may awake in the morning unconscious of indisposition, until he makes the attempt to get out of bed, and then he finds that he has lost the power of moving an arm or a leg; or when he is called in the morning and attempts to speak, his utterance is imperfect, and his mouth is observed to be drawn to one side. Similar occurrences may arise suddenly in the day-time, without any or much derangement of the other functions. Such a case is called a *paralytic fit* or seizure, or the sufferer is said by the vulgar to be planet-struck. Professional men, however, are accustomed to consider all cases of paralysis as milder cases of apoplexy: and having made this observation, I shall proceed to give a brief summary of the means to be adopted when you are called to cases either of apoplectic or paralytic seizure; for it would be foreign to the object of a work like the present, either to detail all the variety of symptoms, or to dwell upon the minutiae of practice, in all the innumerable grades of apoplectic and paralytic seizures which occur in practice, particularly as, from their importance and duration, they must, soon after the first seizure, come under the care of professional men.

In all graver attacks of apoplexy, whilst the assistants are by your directions raising and supporting the head, wiping the froth and saliva from the mouth, and loosening or removing the coverings of

the neck, you will proceed to examine the head, if an external injury be suspected; and you will make the necessary inquiries as to any preceding debauch, if you have the least suspicion of intoxication. Satisfied as to the reality of an apoplectic seizure, you will without loss of time open a vein and bleed largely. If, after the abstraction of a pound or a pound and a half of blood, you perceive no signs of returning motion and consciousness, you may, in a stout robust habit, take away double that quantity. The next step will be to strip and place your patient in bed, with his head and shoulders considerably elevated, regulating the temperature of the room and the quantity of bed-coverings by the season of the year and the external warmth of the patient's body, so as to preserve a moderate and genial warmth; and to avoid an over-heated or crowded room. If the patient can be made to swallow, give him a strong purgative, ten or twelve grains of calomel with half a drachm of jalap, and follow it up with a quarter of an ounce of Epsom salts in a small quantity of water, to be repeated every hour or two till the bowels begin to be moved. In two or three hours from the first bleeding, you are to decide upon the propriety of opening the vein a second time. If the patient had some return of consciousness, if the breathing became less noisy, if he made some attempt at speech or at motion during the bleeding, or immediately after it, and if these symptoms of improvement have not pro-

gressed since, and if you now find the pulse slow and strong, do not hesitate to draw away another basinful of from a pound and a half to two pounds. In addition to this bold practice, put a blister between the shoulders, and mustard poultices to the inside of the legs, and you may reasonably expect the thanks of the medical practitioner, who ought in the first instance to have been summoned, and will in all probability have by this time arrived.

To him you will of course consign the future medical treatment of the case; but, in your future attentions to such patients, you may greatly aid the views of the surgeon by encouraging the friends of the patient to persevere in the proposed plan of treatment, and by enforcing his instructions; for the friends and neighbours, who have probably been very anxious, and very active in adopting the recommendations hitherto, will be very apt to relax, if the patient does not soon show signs of material amendment, or does not continue to progress in improvement. With this observation, I now conclude my instructions relative to your duties in sudden and serious apoplectic seizures.

We will now suppose that, in your frequent intercourse with your parishioners, you have observed in some one of your neighbours some or all of the following precursory or premonitory symptoms of apoplexy,—severe headaches, or frequent sudden pains in the head, accompanied with flashes of light or sparks before the eyes, noises in the ears, and

pulsations or throbbing throughout the head, with a full and strong pulse at the wrist, momentary loss of consciousness, great drowsiness, occasional loss of memory, perhaps a numbness or prickling sensation in an arm or a leg, or even a temporary paralysis. These symptoms are most apt to occur in persons who are more than forty years of age, are of robust habits, and have flushed or deeply florid countenances, and, as you well know, in persons of indolent and self-indulgent habits.

In such a case your whole influence will be required, and will be properly directed, to induce the patient to abandon such habits, and to adopt in their stead activity, sobriety, and abstemiousness. You may also with propriety and advantage recommend one general bleeding; and afterwards occasional cupping between the shoulders, and a brisk purge whenever indicated by more than usual drowsiness or headache, or a recurrence of any of the other symptoms enumerated above. Total abstinence from fermented liquor, and great moderation in eating, must in general be insisted upon. These are the broad rules applicable to nine cases out of ten; but now and then apoplectic threatenings are apparent in persons of feeble stamina, and temperate habits, connected perhaps with irregularity in the circulation from altered structure in the heart or large vessels, or in the vessels of the head itself, or with great derangement of the digestive organs, or with some other chronic constitutional

ailment. In such complicated cases you will of course not be left to your own judgment; but even here you may fearlessly resort to local bleeding, an open blister on the neck, and to mild aperient medicines in the necessary absence of professional advice. Regularity in the daily habits of such a patient, the prevention of all mental excitement or alarm, quietude, early hours, moderate exercise, light employment, plain and moderately nutritious diet, with cheerful society, are in every way to be encouraged; and over all these circumstances it is to be supposed that you may exercise more control than the physician or the surgeon.

We will, in the next and last place, make a few observations on cases of *paralysis or palsy* of some standing, in which the patience of the poor sufferer has been perhaps exhausted by the inefficacy of the remedies, and where the medical attendant has in consequence ceased his efforts, and medical treatment and medical management have for a time been very nearly, if not wholly, abandoned. In such cases you will do much good by continually repeating your admonitions, and urging the propriety of persevering efforts on the part of the patient to move and use the paralytic limb. Even where frequent attempts at voluntary motion, as the raising of a paralytic arm, have failed again and again, I have known at length the power unexpectedly restored, in a very slight degree of course at first, apparently by the repetition of these efforts of

the will. You will often too find opportunities of persuading to a continuance of, or a return to, the use of friction, on which considerable reliance may be placed if assiduously persevered in. Simple friction with the hand, or with a ball or roll of flannel, or with a flesh-brush may be recommended; and when the patient or the patient's friends begin to relax in these efforts, you must use all your influence and ingenuity to urge them to its continuance by the adoption of stimulants, as warm brine, essence of mustard, or flour of mustard in warm water, or decoction of horse-radish root, and various embrocations, as hartshorn and oil in the proportion of one to four, tincture of cantharides and oil in the same proportion, or the linimentum ammoniæ of the shops. By judiciously varying these, and exciting confidence in each for a time, you may prolong the practice of friction, which is to be the object of your own confidence; and remember that the plan may be advantageously persevered in as long as improvement continues to be apparent, and do not allow yourself to be discouraged by the slowness of the recovery. The friction should be prescribed to be repeated two or three times a day for an hour each time. If you possess an electrical machine, these are the cases in which its efficacy should be tried; and if its use does not produce headache, or materially increase the fulness of the pulse, it may be persevered in for several weeks, the patient being placed on the

insulated stool, and sparks drawn from the affected part for about a quarter or half an hour daily. The medicine in which I have most faith in cases of the description now under consideration, is strichnine, a preparation from *nux vomica*; but as it is a very active medicine, I advise you never to administer it but under professional direction, and I only mention it here, that you may suggest it to the surgeon in attendance. It may be given in pills, beginning with a quarter of a grain for a dose three times a day, and gradually increasing the dose to a grain. Its observable effects are involuntary startings, jerkings, or slight convulsions in the muscles of the paralysed limb, and if these do not occur in a few days, the medicine should not be longer persevered in.

To complete this letter or lecture, call it which you will, on fits or sudden seizures, I shall make a few observations on some other disorders which often come on at first so suddenly, and still oftener experience so sudden an aggravation of symptoms in persons liable to the particular disease, as to be termed *fits*; and which therefore you may be not unfrequently called upon to witness, before professional aid can be obtained. Two of these, being diseases of the brain, come naturally enough to be considered immediately after apoplexy; and other two, which have their seat in the chest, shall be treated of afterwards.

The first, *mania*, or *madness*, is in most cases

an hereditary disease ; the other, called in our Nosologies, *Delirium tremens*, is in almost every case the consequence of excessive indulgence in drinking ; the trivial name of tremens being given to it from the nervous trembling of the voluntary muscles, which accompanies it, keeping the eyes, hands, and other parts in constant motion, which, however, is only a part of that universal agitation and restlessness which characterises the disorder, and distinguishes it in a great degree from insanity, which it otherwise greatly resembles. It is designated by many, very appropriately, *Brandy fever*, from its usual exciting cause ; and, from the violent disturbance of the mental powers, it is at other times called *Brain fever*.

A fit of INSANITY in persons predisposed to this most distressing malady sometimes comes on so suddenly, and particularly in the night-time, that the patient, having retired apparently in his usual health, jumps out of bed in the middle of the night under some imaginary alarm, disturbs the family, threatens, and perhaps effects, some serious mischief to himself or others, or seeks refuge from some imaginary danger, or dwells with horror on some supposed dreadful risk incurred, or injury sustained. In such a dilemma, the friend who can command a firm authoritative manner, and whilst looking the patient stedfastly in the face, will seize his arm, and lead him resolutely back to his bed, need not dread his violence ; neither will he, gene-

rally speaking, experience much difficulty in accomplishing his object, and retaining him in safety till further assistance shall arrive. When the violent madman once discovers that he is mastered, whether it be by main force or by a resolute deportment, he crouches and submits, moodiness succeeds to violence, he watches every movement of those about him with suspicion, and, brooding over his supposed wrongs, he seeks now to effect by stratagem what before he openly professed to be his object, and attempted to accomplish by force. The *future* management of such a patient, both moral and medical, is altogether foreign to the proposed object of these letters; and on the subject of the *immediate* medical treatment at the time of a sudden accession of a fit of insanity such as I have described, I only deem it necessary to caution you against the practice of bleeding, which used to be generally, and is still occasionally, resorted to by medical men, but which in nine cases out of ten aggravates the symptoms. I may further advise you to confine your treatment to personal restraint, cold applications to the head, and, if professional assistance is not immediately expected, to the administration of a powerful emetic.

Although the urgent symptoms, as above described, frequently burst forth suddenly, and take the friends of the patient by surprise, yet a watchful and a practised eye will usually discover, some days or even weeks previous to such an outbreak,

an unusual appearance, an altered manner, and a change of temper in the patient, which, occurring in a person hereditarily predisposed to the disease, ought to induce a great degree of care and watchfulness in the friends, even when he has never before laboured under the disease ; but more particularly so, if he has formerly been so afflicted. And if the premonitory symptoms, which I am about to describe for the purpose of putting you on your guard, are strong and not evanescent, even personal restraint becomes a duty before violent symptoms burst forth.

These premonitory symptoms are unusual watchfulness at night ; an acknowledgment that he cannot command his thoughts, but that strange and unaccountable fancies present themselves in an uncontrollable manner ; also, that he hears various noises, particularly of persons talking ; that he can distinguish their conversation, which is almost always in reference to himself : all which, however, he acknowledges in the day-time must have been a delusion. After a time these delusions are stronger and more permanent, and at length he stamps upon some one of them the conviction of reality. His conduct in the day-time is at first but little altered, and it is only the very observant who can detect any difference from its usual tenour. His attention, however, to his accustomed employments is less steady ; his eye wanders, his temper is more irritable, his countenance occasionally gloomy, but

at other times lighted up with more than its accustomed animation. His conversation is at times remarkable for its flashes of humour, wit, and repartee. After a while he becomes peevish and easily irascible, and when not thus excited he is gloomy and suspicious, and at length he displays an entirely altered character. The serious and sedate man becomes gay and hilarious, the steady tradesman becomes speculative, the timid rider a Nimrod, the economical man becomes extravagant, the indolent man active and restless, the good-natured person tyrannical and suspicious, and the affectionate entertains and cherishes dislike and hatred towards the persons formerly most esteemed, loved, and admired. A slight inattention from such a one is styled a gross insult; offence, taken on very slight or no grounds at all, becomes deadly hatred; dire revenge is brooded over, meditated, contrived, and sometimes perpetrated at the very first outbreak; or if despondency as to his own temporal or eternal state has become the prevailing peculiarity, suicide attempted, or unhappily effected, gives to the friends the first conviction of the patient's disordered state of mind, or at least the first serious alarm. How important then is it, that the premonitory symptoms should be duly appreciated, carefully watched, and promptly treated both morally and medically; and how many a melancholy event may be prevented by a sufficiently early resort to watchfulness, and perhaps restraint!

In deciding upon a case of insanity, in which your judgment is very likely to be called upon to aid in the consultation of friends, always hold this in remembrance, that it is not so much the particular incongruous acts, or the particular incoherent and frivolous expressions, which may be brought against the patient, as their incongruity and incoherency in regard to, and in relation to, the former deportment of the individual in question. For instance, were you to see an active and hardy sailor climbing up the outside of your church-steeple, you would not for a moment suspect him of madness, however you might declaim against his fool-hardiness; but if your rector or your churchwarden were seen doing the same thing for no other professed object than to gain applause for boldness or agility, it would go far towards establishing the fact of the insanity of either. I well remember, many years ago, being the first to pronounce a respectable attorney to be insane, from the circumstance of his suddenly becoming, and boasting himself to be, a bon-vivant, and as suddenly assuming the character of a fox-hunter, though I had daily before my eyes another attorney of the same propensities, whom I knew to be both sane and shrewd; but the first gentleman had always been previously a man of sedate habits, and very observant of all the decorums of society; whereas he now not only had his dinner-parties more frequently, but, on Sundays as well as other days,

his wonted taciturnity was exchanged for incessant volubility, and his fox-hunting was pursued without judgment or discretion. A few days proved to all his friends that my prognosis was correct.

Should you receive a hasty summons to one of your parishioners of acknowledged intemperate habits, with this addition to the message, to urge you to immediate attendance, that he is raving mad, or that he has been wild and delirious and unmanageable all night, you may prepare yourself to find a case, not of madness, but of DELIRIUM TREMENS. On your arrival the patient recognises you with a hasty greeting, answers to your inquiries, that he is quite well, attempts to rise from his bed, offers familiarly to shake hands, and talks with volubility; but all is done with excessive agitation; his hands tremble, his eyes wander restlessly into every corner of the apartment, his eyelids twitter, he bites or picks his lips incessantly; if permitted, he tries to dress himself, but bungles sadly in his efforts, mistaking one article of dress for another, and putting them ridiculously out of place. When no longer roused by your first appearance and by your inquiries, but left wholly to himself, he picks at the bed-clothes, not unconsciously like a patient in an advanced stage of typhus fever, but like a person annoyed by something disagreeable, his eyes following his fingers in hunting for the supposed objects; and he perhaps asks the attendant to remove the nasty creeping things away from him.

He frequently addresses imaginary persons, or holds discourse with the devil or his imps, or, his thoughts running in a more cheerful strain, he insists upon it that merry dancing is going on in his room, or perhaps some military spectacle. He talks aloud on these subjects, addresses the parties supposed to be present, and, if not restrained, he continually makes efforts to join the gay, or avoid the hideous creations of his own sensorium. At other times such a patient will shriek, call aloud for help, sing and laugh by turns, or he will spit at, and try to bite, his attendants.

Such an attack or paroxysm as we have now described, is most apt to take place in the night; or similar disturbance, but in a much slighter degree, may have occurred on two or three successive nights, before it has attained such a degree of unmanageableness, or has continued so far into the morning, as to induce the friends to call in the aid of either doctor or neighbours. It is also most apt to occur a day or two after more than his usual indulgence in spirituous potations.

As regards the treatment in delirium tremens, I have always found that a soothing, coaxing manner has tended more to tranquillise the patient, than the stern and resolute deportment recommended in treating of insanity, so much so, that I have sometimes succeeded in procuring calmness and even sleep, by holding and stroking the patient's hand, closing his eyelids with my fingers, and talk-

ing to him as to a restless child, when you are coaxing it to go to sleep. Restraint, however, must in many cases be resorted to, when the former plan fails; and then the ordinary strait waistcoat is more lenient, as well as more effectual, than the forcible manual restraint of three or four persons, constantly exerted.

The *medical* treatment, which may be confided to your judgment upon the emergency, is to apply cold to the head; and to administer opium or laudanum, first in a very full dose, and afterwards in repeated smaller doses. The *dietetic* treatment is to allow, in regulated quantities, the very stimulus that has been his bane, and has produced the disease under which he now labours.

The cold may be applied by a continual renewal of cloths, or of a thick cotton or woollen night-cap, soaked in vinegar and water, or in any kind of spirits and water; or, if the season affords the opportunity, the free application of snow or ice may be had recourse to.

The first dose of an opiate may be a dram or a tea-spoonful of laudanum, or three grains of solid opium; after which the third or fourth part of this quantity may be repeated every four hours.

I would further observe, that when frequent retching or vomiting occurs, which is not unusual, I find very small doses of calomel, frequently repeated, to be the most available medicine, say half a grain every ten minutes, for three or four suc-

cessive hours. Under these circumstances too, I mean when the sickness is urgent, I forbid the loading of the stomach, even with liquids, and indeed I enjoin complete abstinence for many hours. A single tea-spoonful of brandy may be occasionally given, with a desire that it be held in the mouth as long as possible, and allowed to be swallowed gradually with the saliva; and the dryness of the mouth may be relieved by washing it with toast and water, which is not to be swallowed.

The stimulus to be allowed in ordinary cases, where vomiting is not an urgent symptom, may be cold weak punch, or white-wine negus, or simple brandy and water, or wine and water, or otherwise a little wine or brandy in gruel or sago, according to the patient's wishes, regulating the quantity from one table-spoonful to three of the spirits, or from one to three glasses of wine, every four hours, according to the previous habits of the patient; remembering this, that the more intemperate and inveterate have been his habits, the more of his accustomed stimulus will he require.

I need say no more on the treatment of such a case, whilst it can with any propriety be under your direction, unless it be to guard you against the practice of general bleeding, violent purging, or the administration of an emetic, all of which I have occasionally known to be had recourse to, and particularly bleeding, but I must add, never with advantage, and often with the effect of aggravating

all the symptoms. The application of leeches to the forehead and temples is less objectionable; and when the eyes are suffused with redness, and the patient complains of pain in the head, I am not prepared to say that they will not prove serviceable.

The two other diseases, which I proposed to describe in this letter, are Angina Pectoris, and Asthma; the former coming on in fits of acute pain in the chest, the latter in paroxysms of oppressed breathing. ANGINA is usually a disease of advanced life, seldom occurring in persons under fifty; its attack is very sudden, and the frequency of its recurrence very uncertain; a fit of it comes on with a sensation of tightness across the chest, which soon amounts to acute pain in the region of the heart, striking across to the other side, and generally down one or both arms. The action of the heart is much embarrassed, as is indicated by a hurried, unequal, and intermitting pulse; the countenance shows great anxiety and distress, and in severe cases is bedewed with a cold, clammy sweat. When the seizure comes on during walking, the patient is obliged to stop, turns naturally from the wind, if it be in his face, catches hold of something for support, and does not venture to advance till the paroxysm begins to abate. The early attacks usually come on when the patient is making some great exertion, as walking against a brisk wind, particularly up an ascent; or when subjected to

great alarm, or during a paroxysm of rage; and the severity and duration of a fit in the early stage of the disease is usually moderate, indeed sometimes only momentary. In its advanced stage, however, much slighter exciting causes are sufficient to bring on a fit; as stooping to tie a shoe, crossing a cold passage in the winter season, slight disturbance of temper, or an overloaded stomach; and the fits are both more severe, and of longer duration.

Mild attacks are usually over before any remedial means can be resorted to, and your advice can only extend to pointing out the ordinary exciting causes with an admonition to avoid them, and a caution to the patient to adopt very regular habits, both in diet and in exercise. When the fit lasts for some minutes, warm brandy and water, a wine-glassful of peppermint water, or a teaspoonful of sal-volatile, whichever be at hand, will often shorten the paroxysm; but such patients should be constantly provided with a small phial of ether and laudanum in equal proportions, so much diluted with water, that one half, or any other given portion of it, may be an efficient dose, which under ordinary circumstances may be about thirty drops of each; and when former experience has taught the patient to expect a smart attack, this dose may be taken at the first moment of his seizure, and may be repeated, if necessary, an hour afterwards. In still more protracted cases I can recommend

another remedy, which I have found so decidedly and almost invariably successful in the frequent attacks, to which a valued friend and patient of mine has been for some years subjected, that I deem it a duty to mention it in this place. The remedy is an emetic. The patient now referred to seldom passes an interval of a fortnight without a seizure; a very slight cause suffices to bring it on, and indeed it occasionally seizes him without any assignable exciting cause at all; the pain at the heart, across the chest, and down both arms, is intense, a cold clammy perspiration bedews the whole surface, and the pulse suddenly rises, in frequency from about 60° to 120°, and from being moderately full and steady it becomes small, irregular, fluttering, and intermitting. This state of things we have reason to believe, from former experience, would last for several hours, and when the attacks were formerly treated with ether and opium, very full doses were required, and much serious disturbance, mental as well as corporeal, was the consequence not only for hours, but for a day or two afterwards. For a long time past emetics have been substituted; and now, when a paroxysm of pain comes on, with the altered state of the pulse, which uniformly attends it, and which indicates the oppressed state of the action of the heart, that moment an emetic is given, and its speedy effect insured by drinking warm water or weak chamomile tea. Sometimes the first effectual retching, or act of vomiting is instantly

followed by relief, but oftener this does not take place till the effort has been repeated once or twice; it however uniformly happens, that after an act of vomiting, the pain is gone in a moment, the patient expresses himself quite well, and the pulse, which was quick, irregular, and fluttering, becomes in less than a minute slower and firmer, and in two or three minutes quite natural. This relief is equally speedy and complete, whether the stomach were loaded with food or otherwise, so that it is the violent effort of vomiting that relieves the overloaded heart, and stimulates it to action. Neither does it signify much of what the emetic consists; at first I was in the habit of giving mustard and salt as the most expeditious in its operation, but the patient becoming disgusted with the quantity necessary to be taken, I have lately substituted one grain of tartar emetic, and ten of ipecacuanha, which proves equally effectual, and is very nearly, if not quite as speedy in its operation.

ASTHMA is usually a disease of middle age, unless it be, as now and then is the case, connected with, and dependent upon, original malformation of the heart, or an unnatural conformation of the chest, in which case it usually makes its first appearance in childhood. Asthma, whether connected with malformation or not, is a hurried, oppressed, and noisy state of the breathing, coming on in paroxysms, and leaving the patient quite well in

the intervals, in many cases; whilst in others there may be observed at all times an imperfect state of respiration, namely, a little thickness or wheezing, and a more confined dilatation of the chest than natural in inspiration. An asthmatic attack, or a fit of asthma as it is called, usually, however, consists of two, or three, or more aggravated paroxysms of difficult breathing coming on for as many successive nights, with alleviation during the day-time, but not a perfect freedom of respiration till the expiration of these three or four days, after which the patient may remain free from another attack for many weeks or many months.

A peculiar state of atmosphere is a frequent exciting cause of an asthmatic attack; damp foggy weather will induce it in some, a north-east wind in others; some asthmatics are liable to an attack when spending only a single night in London, or other large town, whilst some few are more exempt from attacks under these circumstances than when in the country; particular odours will excite a paroxysm in some, and exposure to the dust in certain manufactories, as feather-dressers, file-makers, and others, will bring it on in most persons who are predisposed to it. A single indigestible meal, and particularly a hearty supper, is another frequent exciting cause; and such as are habitually inattentive to the quality and quantity of what they eat and drink, have the most frequent and most severe attacks. But the most common ex-

citing causes, after all, are just such as would induce in other persons an ordinary cold, as exposure to cold or damp in any form. The breathing, when asthma comes on, is so distressing as to make the patient sit up in his bed, change his posture again and again, release himself from bed-clothes, or anything that is tight across his chest, withdraw the curtains, or rise and walk about the room, and seek an open window, or perhaps the open air. The wheezing is attended with occasional coughing, and at length the expectoration of some viscid phlegm greatly relieves the patient, he breathes tolerably easy for a while, and after a little more coughing and expectoration the paroxysm ends.

The disease is seldom, if ever, fatal of itself, but when long continued it often induces other diseases, as local or general dropsy, and thus shortens life.

The preventive treatment consists in avoiding all the exciting causes, which have been enumerated above, in seeking air and climate that agree best with the individual, and in taking vigorous exercise. When a paroxysm is threatening, or has actually commenced, I recommend an emetic late in the evening, and small nauseating doses of ipecacuanha, as two grains every four hours, during the day. Should the asthmatic breathing recur the same night after the emetic, recourse may be had to the smoking of stramonium, which almost deserves the title of specific in asthma; and, at all

events, a pipe of it should be smoked the three or four following evenings before going to bed, and again in the night if the asthma comes on. The stramonium or thorn-apple, grows wild in many parts of the country, and is easily cultivated in our gardens; every part of the plant possesses a narcotic quality, but the leaves, and leaf-stalks, and stems are the parts usually dried and cut into small shreds for smoking. One common pipeful is usually enough to be smoked at once, and caution should be given that three or four pipes would be attended with very hurtful if not dangerous results. This is found to be so valuable a remedy to asthmatics, that to instruct any poor neighbour who is so afflicted, both in the growth and in the use of it, would be doing a very great act of kindness. Strong coffee during an attack of asthma is always an agreeable beverage, and has sometimes greatly relieved the spasmodic breathing. Ether is sometimes useful during a paroxysm, of which a small tea-spoonful in water is a proper dose; but I ought to observe, that I have now and then known this to aggravate the distress; I have also myself met with one instance, and other practitioners have observed the same, where the odour and smallest particle of ipecacuanha taken in with the breath would bring on an attack of asthma. In some cases that I have met with in practice, little or no benefit has accrued from any of the remedies here proposed; and under such circumstances I once

ordered a lady in her first attack of asthma to be removed, after three or four days and nights of oppressed breathing, to a friend's house, twenty miles further inland, with the happiest result; the very first night after the removal being passed in perfect freedom from the asthma.

In the long intervals between the paroxysms a tonic plan has been recommended, as small doses of steel and bark, or a course of chalybeate waters; and by others much stress is laid upon the continued use of small doses of ipecacuanha in vinegar; but this part of the treatment must be left to the judgment of the medical practitioner. Any great change in the habits and mode of life, as well as in the locality of the patient's residence, has been found to lessen, if not to obliterate the disease; and I should always recommend to persons of sedentary employment to adopt, if possible, a more active mode of life. Where the patient can make a change of residence too, I would advise as great a contrast as possible; thus the fenman should emigrate to a high country, and *vice versâ*; the countryman should seek the city, and the citizen the country; and a further change of clime by travelling abroad may be reasonably tried as an experiment, where it can be easily effected.

LETTER IX.

ON FEVERS—CONTINUED, REMITTENT, INTERMITTENT OR AGUES; NEURALGIA OR NERVOUS PAINS.

MY DEAR SON,

HAVING now taken a review of all such accidents, and all such sudden seizures of illness, as are likely to be brought before you in your medico-pastoral duties, you may at first be disposed to think that I have completed the object I had in view in writing these letters; but there will, as I observed in my introductory letter, be very many cases of other diseases so mild, at least in their origin, as not to be deemed worthy of calling in professional aid for the treatment of them, but in which you may, if properly instructed, give useful advice; there will also occur many examples of illness of greater importance ignorantly unnoticed, or through ignorance mismanaged, in which you may be of service. Besides which, in many ailments of a *chronic* nature you will frequently find, that, from perhaps a necessary consideration of the expense, or from some other cause, medical attendance ceases and medicines are discontinued long before the patient has perfectly recovered; here of course your skill and your medicine-chest may be legitimately made available for good purposes; and lastly I would observe, that in most instances of slight deviation from health, and during convalescence after illness

of a more serious character, much advantage may accrue, or mischief be averted, by your being competent to give judicious advice on the subject of dietetics.

On all these accounts, and with a view to prepare you for all such occurrences, I deem it meet to take now a review of many other diseases which have not been treated of in my former letters; only such a cursory review, however, as will afford me the desired opportunities of making practical remarks with a bearing to the above observations.

I forewarn you, therefore, not to expect a detailed account of such diseases, as regards either their history, a full detail of their symptoms, or the minutiae of their medical treatment; and my reader must not expect to rise from the perusal of the letters which follow, with such a knowledge of the diseases noticed in them, as will enable him to distinguish between acute and sub-acute inflammation of the various internal organs and tissues—between the different grades of malignancy in epidemic fevers, measles, small-pox, cholera, or the like; or with such a knowledge of their treatment, as will enable him to supersede the regular practitioner.

My object will be fully attained if I can make you comprehend with tolerable accuracy the following particulars:—first, when any case of one of the diseases about to be reviewed is so mild, that you may venture to prescribe and trust to your simple remedies; and when so severe, that it be-

comes your duty to urge the patient or his friends to send for medical aid; secondly, how to prescribe with some advantage in the commencement of certain cases of greater severity, where professional aid from any cause cannot be had; thirdly, to know what remedies may be tried in a variety of *chronic* ailments, which would otherwise be wholly neglected or mismanaged; and fourthly, by what rules to regulate the diet, the exercise, and the clothing of various invalids and convalescents.

The present letter will be devoted to the consideration of FEVERS.

In common parlance we say that a person is feverish or has fever, when the skin is hot and his pulse quick, not transiently as after exercise, but permanently for one, or two, or more hours successively. The concomitant symptoms are usually a sense of general uneasiness and fatigue, headache and watchfulness, a foul tongue, with thirst and loss of appetite. These symptoms are usually preceded or ushered in with general or partial rigors or chilliness, or a complete shaking fit; and they are very frequently, though by no means uniformly, succeeded by perspiration, which produces abatement of heat, headache, thirst, and quickness of pulse.

This succession of stages, namely the cold, hot, and sweating stage, constitutes a *paroxysm of fever*. When such a paroxysm invades a previously healthy person, and is not the precursor of local mischief,

we term the fever *idiopathic* ; but if the patient has met lately with any severe accident, or has been labouring under previous disease, as consumption, local inflammation, or abscess, or if the paroxysm of fever is accompanied with, or immediately succeeded by, local pains and other signs of inflammation, we call the fever *symptomatic*.

In cases of idiopathic fever, the symptoms above enumerated are frequently preceded by a day or two of slight general indisposition ; and when all or a considerable portion of the above symptoms are grouped together, and continue for several days or weeks with but little of intermission or abatement, and at the same time without much aggravation of symptoms, they constitute *simple fever*. Many cases of such simple fever occur in previously healthy persons, particularly in the summer season ; and after a day or two, or perhaps a little longer period, the fever gradually subsides, and health is gradually restored.

If the pulse is full, the headache severe and throbbing, the eyes ferretty, and the heat of skin intense, the fever is termed *inflammatory*. Fevers of this description occur mostly in stout healthy persons, and are not connected with contagion or atmospheric influence.

When the urgency of the first symptoms, instead of subsiding after a few days, is observed to increase, when the pulse becomes more rapid, and at the same time small and feeble, when the skin is

dry and of a biting heat, the tongue parched, and perhaps thickly coated, or perhaps intensely red, with or without a list or streak of darker hue in the centre or on either side of its centre, with dark sordes or dry mucus about the teeth, when the senses are more perturbed and low delirium comes on, and the prostration or loss of strength is great, we denominate the fever *typhus*.

The simple, the inflammatory, and typhus fevers, thus slightly sketched, are called *continued* fevers, from there being a certain degree of persistency in their symptoms through the progress of the disease.

But when there are marked intervals of remission, and recurrences more or less regular of exacerbation, each instance of exacerbation usually commencing with chilliness, followed by heat and then perspiration, the patient, however, not feeling well or even very greatly relieved, or free from fever in the intervals, we call such fever *remittent*.

Again, when the symptoms constituting a paroxysm of fever are succeeded by a return of health, or at least of freedom from fever, and when after a certain number of hours or days the paroxysm recurs, we pronounce this a case of *intermittent* fever or ague, which are synonymous terms; and, according to the length of the interval between the accession of one paroxysm and another, we have quotidians, tertians, quartans, with certain varieties of each.

I would here observe that remittents and intermittents are the prevailing fevers of our fenny country, and exceed the number of cases of continued fever in the proportion perhaps of four to one; and I would apprise you that these fevers, with their various consequences immediate and remote, will constitute a considerable portion of your pastoral practice.*

Before dismissing these introductory remarks, I would further observe, that the same simple paroxysm of fever may be followed in two or three days by some specific determination to the skin, in the form of an eruption, as in small-pox, measles, and scarlatina, which are therefore called *eruptive fevers*. There are also other diseases somewhat analogous to these, ushered in by a paroxysm of fever, in which the specific determination is to other particular textures, as in rheumatic fever to the tendons of muscles and joints, in cholera to the mucous membrane of the stomach and small intestines, in dysentery to that of the large intestines, and in ulcerated sore throat to the mucous membrane of the throat. The same simple paroxysm of fever is also the usual precursor of acute inflammation, whether of the skin as in erysipelas (St. Anthony's fire); of the cellular membrane, the fleshy parts, or tendinous expansions, where inflammation often runs high and terminates in extensive abscess; or in the attacks of inflammation of any

* In the Isle of Ely.

important viscus or its investing membrane, comprising all the cases of inflammation of the lungs, heart, stomach, liver, &c. Thus you will perceive that there is something in the commencement of almost all acute diseases that is alike, something analogous in the first general constitutional disturbance.

These acute inflammations, however, as well as the eruptive fevers, and the diseases just mentioned, will be treated of separately in future letters, and I shall now enter upon the consideration of those diseases, which nosologists have in their artificial systems denominated *fevers*, and which, as I have stated before, are divided into continued, remittent, and intermittent.

Congestive fever, a term frequently made use of by recent authors, not signifying a separate genus, but only a variety of *any* fever, in which local pain or tenderness or disturbed function indicates a preternatural determination of blood to, or perhaps subacute inflammation of, such tissue or organ, need not be treated of separately.

The symptoms of a simple paroxysm have been sufficiently, though very briefly, stated in the early part of this letter. They are in a majority of cases nearly the same at the commencement of the disease, whether it shall afterwards in its progress exhibit the form of continued, remittent, or intermittent, except that all the three stages are most distinct in an intermittent; that the first or cold

stage is frequently only chilliness rather than shivering or shaking, in both remittent and continued fever, and that the third or sweating stage is often altogether wanting in continued fever.

As the symptoms are pretty uniform, so also is the practice, in the beginning of fevers, at least so far as I need impart the particulars of it for your guidance; and therefore what I am now about to observe, applies to the commencement of all fevers.

It was once a very general practice, and still is with some physicians, to begin the treatment with an emetic, but I prefer in most cases the exhibition of a purgative, as pills of calomel and colocynth followed by salts and senna, or salts alone. If a fever is ever cut short by medical treatment, I am of opinion that this will prove as effectual as the emetic; and as it is of consequence to keep the stomach quiet during the progress of the disease, and as the effect of an emetic at the commencement is sometimes to produce, and still more commonly to keep up, an irritable state of stomach when present, I prefer, as I said before, the purgative.

It was once a rule too of almost universal application, both at the commencement and during the progress of fever, to give an emetic to a patient who is vomiting, and a cathartic to a patient who is griped and purged, with a view, as it was said, of assisting nature to throw off the offending matter; and such is still the reasoning amongst the class of patients to whom you will be called; but this is very far from being a good rule, and I

advise you under the former circumstances not to administer an emetic, unless you are satisfied that the patient has very lately eaten a hearty meal, or that the sickness came on immediately after eating something which might reasonably be expected to disagree; and I also recommend in the latter case, that is, where a natural purging accompanies the first symptoms of fever, that you do not order a purgative until you have considered, whether it may not be proper first to allay the pain and irritation in the bowels by means which I shall presently explain to you.

If you see your patient during the cold stage, you will never err in ordering him to a warm bed, and giving him hot diluents, as tea, plain gruel, or toast and water as hot as he can sip it; and if there be no local pain, no cough, and no delirium, you may add a little wine or spirits. In the hot stage, when there is usually much thirst, you may allow your patient to drink freely of water, cold or warm, as is most agreeable to him, not being afraid of the former, for it will frequently prove the most effectual and most speedy means of producing perspiration; and you are constantly to bear this in mind, that the sooner you bring on the third or sweating stage, the sooner you give relief to the patient. During this third stage the drink should again be warm, and great care should be taken to prevent a chill.

In continued fever after this first paroxysm, the skin remains hot, and if there has been perspiration,

which is not always the case, it soon becomes dry again; the pulse is quick, and continues so, with but slight variations, through the whole course of the disease, or till convalescence commences, a period which varies from a few days to several weeks. If the case does not speedily terminate in convalescence, then the tongue, at first clammy and slightly furred, becomes thickly coated, dry, and parched, and sometimes assumes other morbid appearances; the appetite is soon impaired or altogether fails; there was at first listlessness and then restlessness through the day, with watchfulness and perhaps delirium at night; this listlessness and inactivity is now succeeded by prostration of strength, which gradually increases as the disease goes on; and a variety of other symptoms may occur either at the commencement of the fever, or sooner or later in its progress; but as our treatment is almost wholly, or altogether, adapted to meet particular symptoms, I shall in the further consideration of the subject, after giving one or two general directions, refer to such symptoms as most frequently occur, or demand more particular attention; and shall blend the treatment with the description of them without reference to any particular order; and I would here observe, that you may consider the practical directions as equally applicable to such symptoms, whether they occur in continued, remittent, or intermittent fever, unless the contrary is specially stated. I shall afterwards conclude the letter with

such observations as I may have to make on the peculiarities of each type or species of fever.

When the fever commences with the symptoms of a simple paroxysm as above described, and no new feature arises in its progress, having given the strong cathartic as there specified, you next prescribe a simple fever draught every four hours,* acidulated water, toast and water, or plain water for drink; perfect rest and quiet, a cool apartment and low diet. The cathartic should be repeated in two or three days if the symptoms have not abated, and a dose of the aperient mixture at other times, if the bowels are not sufficiently open.

The preternatural *heat* will be greatly allayed by the use of cold or tepid water externally applied. The cold affusion, or pouring of cold water over the whole surface of the naked body by means of the shower-bath, a common garden watering pan, or a large pitcher, may be had recourse to with great advantage in the early stage of continued fever, applied at a time when the skin is intensely hot; and at a later period of the disease, the same mode of application with warm water may be substituted, and in still more advanced cases, where the strength of the patient is much exhausted, ablation with a sponge and tepid water will have the like good effects, of proving agreeable and refreshing to the patient, and frequently of procuring perspiration, and consequent reduction both of fe-

* See Appendix, for this and all other prescriptions.

verish heat and the frequency of the pulse. The daily use of ablution in some form ought never to be omitted in every case of fever, and the more generally over the surface the better. In remittents, however, where there is almost universally a perspiration at some period of the day, and a stronger disposition to chilliness, cold affusion is not applicable, and the time for tepid affusion or simple ablution must be cautiously selected, being only proper when the skin is hot and dry.

If the *headache* be severe at the commencement of fever, and be not relieved by the full operation of the first cathartic, you should apply leeches to the forehead and temples, from ten to twenty in an adult, and afterwards keep the head cold with a towel soaked in vinegar and water. Headache in the later period of fever accompanied with delirium and a feeble pulse will more frequently be relieved by an anodyne given at night, as thirty drops of laudanum in a fever draught, and a blister between the shoulders, and the same application of cold to the head; but as it requires some nicety of discrimination to decide between the leeches and the laudanum, or whether both may not be requisite, leave it, where you can, to the judgment of a professional man. Another affection of the head, which frequently occurs as a symptom of protracted fever, particularly of typhus, is *coma* or insensibility, sometimes resembling a calm deep sleep, but more frequently disturbed sleep, the patient

still picking or fumbling about the bed-clothes, and muttering indistinctly as in low delirium, to which it commonly succeeds. It is always an alarming symptom, though sometimes when resembling deep sleep it is the precursor of an amended state. As to the practice in such cases, little can or need be done; blisters should be applied to the ankles if the coma be very deep, and the patient should be now and then roused to take, if it be possible, a little brandy gruel, or a cordial medicine, as a few grains of carbonate of ammonia in white wine.

In all such cases of coma or insensibility, as well as extreme feebleness, the greatest attention to cleanliness becomes necessary in consequence of the unconsciousness of the patient to the calls of nature; nothing short of frequent change of napkins, frequent washing and careful drying, with occasional change of posture, will in such cases prevent the most distressing and dangerous bed-sores. It will require all your powers of persuasion to induce the attendants upon the poor to pay this requisite attention.

When a fever sets in with, or is very soon accompanied by, a distressing *cough* and short breathing, which is often the prevailing character of fevers in the winter and spring, and particularly so amongst children, you must bleed without hesitation, and you have only to decide whether it be by the lancet or by leeches. If your patient be an

adult or above childhood, the fever not far advanced, and the general prostration of strength not great, use the lancet. In very young children apply leeches; two, three, or four in an infant two months old will produce the good effects of a general bleeding. The next remedy in importance in such cases is antimonium tartarisatum, emetic tartar, the dose and its frequency being to be regulated by the age of the patient and its evident effects. A quarter of a grain every four hours will usually produce nausea and occasional sickness, with a diminution in the frequency of the pulse, which are the effects to be desired, and which will almost assuredly be attended with abatement of the cough and other distressing symptoms. The occurrence of vomiting after the first or second such dose of the antimonial is a common occurrence, of which the attendant should be apprised, and at the same time encouraged to persist in its use, with the assurance that such an effect seldom occurs afterwards. Half the above dose may be given to an infant; but I would here observe that in very young children this medicine must not be persevered in so long, nor so uninterruptedly, as in older patients, but must be omitted as soon as a pallid countenance, cold clammy extremities, and yawning, indicate faintness and exhaustion. A fever with the above symptoms may be called catarrhal or bronchitic fever, and at its commencement may be considered and treated as bronchitis or inflammation

of the air tubes in the lungs; but you must expect a continuation of fever of the continued or remittent type, as the case may be, after you have subdued the inflammatory symptoms. And this leads me to offer a general observation on the treatment of all fevers accompanied with local inflammation, that at the commencement of the case your first bleeding and other means of depletion may be generally to the same extent as in simple or uncombined inflammation of the same part, but that you must be very cautious of a repetition of the same means. It is almost an invariable rule with me, where idiopathic fever is well marked, to trust to leeches for any further loss of blood that may be required after *one* general bleeding. But I would here offer another observation, that in our fenny country the usual symptomatic fever attending ordinary inflammations is very apt to assume a remittent character, and to require a corresponding change of treatment, to which I shall hereafter advert.

When a fever sets in with frequent *vomiting* or *purging*, or both, it is termed a bilious fever, and is mostly of the remittent type. This is the character of a great proportion of our autumnal fevers, and in some years prevails as an epidemic to an alarming extent. If vomiting, or distressing sickness and retching with little or no vomiting, is the early attendant of fever, I find nothing so effectual in relieving this symptom as very small doses of

calomel very frequently repeated, as half a grain either in a minute pill or in powder every ten minutes for the first hour, and afterwards every half hour till you have given in all ten or twelve grains.

When *diarrhœa* or purging is the urgent symptom, either with or without vomiting, if the evacuations be very dark or what are usually denominated bilious, or, what is almost equally common, if they be very pale from a deficiency of bile, I adopt the same treatment as in case of sickness, provided there be little or no pain; but if, as is often the case, griping pains in the stomach or bowels, or spasm or cramp in other parts, occur with the vomiting or purging, I add to each of the small pills one-twelfth of a grain of opium; or if, in cases where there is little or no pain, the calomel alone has not in a few hours subdued the sickness or purging, I then give the combination of calomel and opium; again, if the pains or the cramp are *very intense*, I give a full dose of opium at the commencement of the treatment, a pill with two, three, or four grains; or a small or full-sized teaspoonful of laudanum, in which case I order the laudanum to be put into the mouth alone, retained there some time, and then gradually swallowed with the saliva; after which I give the calomel alone or with the opium as directed above. In all these cases of sickness I insist upon absolute abstinence for many hours, only allowing the attendant thirst to be allayed by rinsing the mouth with water, or

toast and water. After the sickness abates, I first of all allow one table-spoonful of gruel with one tea-spoonful of brandy in it, to be given at intervals of an hour, for four or five successive hours; and afterwards the same quantity of thin panada with a tea-spoonful of wine, or else two table-spoonfuls of beef tea or strong broth every two hours. This strict attention to the ingesta is necessary for a day or two, and sometimes longer, to prevent a return of the sickness.

These directions will suffice for your early management of bilious fever; and as the seizures in some seasons are very sudden, as well as very numerous, you will do well in such seasons to keep in readiness a good supply of the small calomel pills, some with and some without opium.

As the after management of fever cases should always be committed to professional men, I shall only further observe as regards these bilious symptoms, that should they occur in a later stage of the disease, as they occasionally do, or should they unexpectedly recur after having been once subdued, you may, in the absence of the professional man, safely adopt the practice above recommended.

When a simple diarrhœa or purging accompanies fever, the evacuations indicating no morbid state of the bile, the common chalk mixture with or without a few drops of laudanum will usually allay it; or if the skin be at the time dry, six or eight grains of

Dover's powder once in twelve or twenty-four hours may prove more effectual.

When the patient has frequent and urgent calls to use the night-table, with more or less of smarting pain attending the efforts, with but very scanty evacuations, and these consisting principally or wholly of discoloured slime or mucus, which symptoms constitute what professional men call *tenesmus*, small starch injections with a few drops of laudanum will alleviate the symptom; but great attention is requisite in such cases to satisfy yourself that there is not still an accumulation of feculent matter notwithstanding these very frequent dejections, and so great discrimination is then necessary to select the appropriate remedies, that you ought very unwillingly to undertake the charge. Should this, however, be sometimes unavoidable, examine the lower part of the belly, where partial distension or more general fulness will sometimes convince you of the fact; make minute inquiries as to the quantity and quality of the food taken, and, where you can, examine the evacuations of the last day or two; and if you have good reason to suspect accumulation, give either castor oil or calomel and rhubarb; the former if the last fecal evacuation was natural in colour, the two last combined if the colour was either too pale or morbidly dark.

Sometimes the frequent slimy or mucus stools are at the same time bloody, constituting a *dysen-*

teric affection ; here also small starch opiate injections once or twice daily will alleviate, and calomel or the grey powder combined with Dover's powder may be given two or three times daily, and leeches applied to the fundament will aid in promoting the cure. The pain, irritation, and frequent purging having been checked, the same observations apply here as in mucus diarrhoea, as to the administration of purgatives.

There is, besides the above peculiarities in the state of the alvine discharges, another, which is almost peculiar to the remittent fever, and is in some seasons a very common and frightful feature in the epidemic, I mean the *discharge of pure blood*. I have often seen a quart thus passed at once, and frequent repetitions of it afterwards in smaller quantities for many days, producing syncope or fainting, and a general pallid or exsanguineous appearance ; and I have more than once witnessed the death of the patient consequent upon such copious evacuation of blood, whilst he was still sitting on the night-table. Of the appropriate treatment of this symptom I speak with diffidence, for although I have seen many such cases recover, and some even after very copious discharges, I have seen many others terminate fatally after every variety of treatment. I am, however, inclined to prefer the occasional administration of full doses of calomel, as twelve or more up to twenty grains once in twelve or twenty-four hours, and the con-

tinued use of nitro-muriatic acid with small doses of laudanum, say five drops of nitric and ten of muriatic acid with four of laudanum, in a small tumbler of sweetened water every three hours.

All the variety of symptoms, which we have hitherto described, occur often in fevers, both of the continued and remittent type, but very seldom indeed in genuine intermittents; and when these, and the other symptoms formerly grouped together under the designation of typhus, occur in cases of the remittent type, we denominate it typhoid remittent.

I have formerly alluded to the terms *congestive* and *congestion* as applied to fever, or to the symptoms of fever; and in further pursuing my practical remarks I now observe, that when there is in the commencement or progress of fever uneasiness or dull pain, with tenderness on pressure in the region of any important viscus, there is said by some authors to be congestion of that viscus, and the appropriate treatment is local bleeding and fomentation. Such pain and tenderness at the pit of the stomach indicates congestion of that organ, and is usually attended with vomiting and increase of uneasiness after eating, and with a dry red tongue. Leeches, fomentation, and a blister, are the external remedies; cold drink, and effervescing draughts, with a few drops of laudanum, the peculiar internal treatment. When the pain and tenderness are felt in the right side below the ribs, with occasional

pain between or on the shoulders, the congestion is in the liver, bilious vomiting or purging are frequent attendants, the tongue is thickly coated, usually of a buff or yellowish tinge, the urine high coloured and loaded, and a yellow tinge sometimes pervades the skin. The local treatment is the same as in other congestions, and the internal remedies are those recommended in bilious fevers, to which this additional observation may be made, that full doses of calomel are more called for, and freer purging will be useful than in a similar type and degree of fever without hepatic congestion. A congestive state of the spleen is a very common attendant upon protracted intermittent, and in addition to the usual local depletion demands also full doses of calomel and brisk purging; and also a long continuance of alteratives after the intermittent or ague has been cured. It is my custom, on dismissing dispensary patients of this description, to give them half-a-dozen or more of five-grain blue pills, and a sufficient quantity of Epsom salts, with directions to take one of the pills every fourth night, and half an ounce of salts the following morning, and this practice I find more influential in preventing relapses than a longer continuance of the quinine or other ague medicine. The congestion of other organs in fevers requires no peculiar treatment that I am aware of, beyond the local bleeding and fomentation.

The *diet* during the progress of fever cannot be

too simple; and if the anxiety of the nurse does not lead her to urge the patient beyond his inclination, there is little fear of its being carried beyond what is prudent, either in quantity or quality, for nature very kindly takes away the appetite when the powers of digestion fail, and when eating would consequently disorder the stomach, and aggravate the fever. The patient's desire for cold water or other cooling drink may be indulged *ad libitum*, except in cases of sickness. A little plain gruel or milk-porridge, with now and then a little weak broth, a cup of tea or coffee with a little sopped toast, biscuit, or plain cake, when wished for by the patient, and a moderate quantity of ripe fruit, furnish a bill of fare amply sufficient for every case of fever, until convalescence has commenced, unless in very severe cases where the prostration of strength is great, and the quantity that can be taken is very small, in which cases strong broth, or arrow-root, with a little wine or brandy, or the yolk of an egg, either in a cup of tea or in a little milk, or in wine and water, may be administered, a table-spoonful at a time; but even in such cases more mischief is to be apprehended by over-stimulating than under-stimulating.

When convalescence is established, very great care is required not to overload or over-stimulate the stomach. Light food and in small quantities must be your constant theme; and no wine or even beer is to be granted to the incessant applications

of your poorer patients and their friends, unless you find a little stimulus necessary to promote digestion, when they commence eating solid animal food. Warm clothing in the winter season, and avoidance of cold draughts of air, during convalescence, are matters of great moment, particularly where cough has been a leading symptom during the illness; and your precautionary admonitions to patients, on first being able to leave the house, after remittent fever in particular, must be urgent and incessant, that they do not expose themselves to a cold north-east wind, which is a most fruitful source of relapse. It is a very common, indeed almost constant practice, to give tonics or strengthening medicines to patients recovering from typhus or continued fever; and in what is called genteel practice, this is with some propriety persevered in during convalescence, first, because the temptation amongst such patients to take improper articles of diet, and too great a variety, is much greater than amongst the poor, and therefore this artificial stimulus is useful; and, secondly, because it is a means of protracting the watchful attendance of a medical eye, to guard against and obviate such irregularities, and many other little errors, into which such convalescents are apt to fall. But as regards the medical treatment of convalescents, such as will fall within the scope of your practice, tonics, stimulants, and stomachics, may all be dispensed with as soon as a return of appetite leads

them to resume their ordinary diet, or enables them to take with zest a basin of broth or milk porridge, or, what is a great favourite with them, onion gruel.

An alterative aperient, as a blue pill at night followed by a Seidlitz draught the following morning, may now and then be required; but seldom, if ever, will there be occasion for other medicine, after even the severest attacks of continued fever. What I have here said by no means applies, however, to convalescents after remittent and intermittent fevers; and this leads me now to make some important observations on the peculiarities of these, our fenny and marshy endemics, with which I promised to conclude this letter.

The characteristic of *remittent*, as I have before observed, is an evident remission, and a marked recurrence of fever, taking place once, or more frequently twice, daily. This recurrence, or rather increase of fever, usually commences with chilliness, which is often only observable in the lower extremities, is sometimes so partial as to be distinctly felt only on the inside of the legs or of the thighs, and is occasionally confined to a cold, and at the same time a benumbed sensation over the back of the head, or along one of the extremities; the most common periods for its recurrence I have observed to be about one or two o'clock in the morning, and again at the same hours in the afternoon. The increased heat which succeeds the

chilliness, is attended with greater quickness of the pulse, more thirst, and an augmentation or return of any accidental prominent symptom of the particular case, whether it be cough, diarrhœa, delirium, or any other symptom. A return of perspiration at the conclusion of each paroxysm is perhaps the most uniform and most observable of any of the symptoms; but it affords in a majority of cases very little immediate relief to the patient's feelings of indisposition. The remission, however, which presently succeeds, varies in every possible degree, being sometimes scarcely observable, and consequently leaving the practitioner in doubt, whether to denominate it a case of remittent or continued fever. Again, the remission is frequently so nearly complete, as to make the case assimilate itself to intermittent; and very often you will meet with cases, where the exacerbation is so well marked on alternate days, as to resemble strongly the tertian ague; but still, the fever being never altogether absent, such cases must be considered remittents with a tertian type.

Here it may not be amiss to observe, that in our marshy country it is never an uncommon occurrence, and that in some seasons, when ague and remittent fever prevail more than usually, it is almost a constant occurrence, that the symptomatic fever attendant upon any other disease, whether an ordinary inflammation of lungs, liver, peritonæum, or other part, or the hectic fever of consumption,

&c., should in its progress assume a remittent character, and particularly so in cases where repeated bleedings have been called for. The appropriate practice in such cases is a matter of the greatest nicety, and requires greater discrimination and judgment than I can hope to communicate to my unprofessional readers; but I may observe generally, that the patient's health will seldom be restored without recourse to small and repeated doses of quinine or arsenic.

You must also be prepared to meet with remittent fever of every grade as to severity; and of greater latitude as to duration, than typhus or other continued fever. I have often at the same time had one patient in the same family lying prostrate on his bed in extreme danger, and another creeping about the house, and perhaps attending to his ordinary avocations, with a foul tongue, disordered secretions, feverish heat, quickened pulse, and all the other symptoms of mild remittent. As to duration, one patient is sometimes either dead or quite well in three or four days, and another lingers under the disease with decided paroxysms, or with only indistinct exacerbations, for many weeks or even months; and in such cases of chronic remittent you are never safe from a sudden aggravation of all the symptoms. Besides which, there is a strong disposition in these fevers to relapse after a promising and even long-continued convalescence. It is by no means an uncommon occur-

rence for a patient to be under the influence of remittent fever, with but few and short intervals of health, for one or even two years, and then to shake off all his varied morbid symptoms of this Proteus of the fens, and enjoy his wonted vigorous health and buoyant spirits.

The practice in remittent fever varies, as you may naturally suppose, as much as the symptoms; requiring more of the same management as typhus or other continued fever, as it approaches to it in character; and being to be treated more or less with the appropriate remedies of ague, as it approximates to intermittent. I may, however, observe, that in remittents of every grade, depletion, either by general or local bleeding, is borne worse than in continued fever; a single venesection at the commencement, if not peremptorily called for by local congestion, insuring a tedious protracted case. Moderate mercurial purgatives, and alterative doses of the same, are more frequently required, and a decided mercurial influence on the system is in many protracted cases the most certain means of bringing about a favourable change. The most important consideration, however, in the treatment is to know when and how to administer the preparations of bark and arsenic, remedies which, in intermittents, constitute our sheet-anchors, and in remittents, when well timed, cut short what would otherwise prove protracted cases, and often suddenly arrest the progress of

fever, and unexpectedly restore health, where, a few hours before, alarming symptoms even threatened the patient's life. Nothing but long experience and accurate observation can give to the practitioner a decided judgment upon this matter, and you must therefore never presume to decide upon this point in severe cases, but abide the judgment of your professional neighbour; and I lay some stress upon the word neighbour, for the most experienced physician from an upland district, where continued fever prevails, would prove a tyro in the treatment of our fen-remittent. I must, however, endeavour to give some general rules for your guidance in the less severe, and in the well-defined cases, where these remedies are called for.

The more complete the remission of fever, and the more distinctly marked the accession of a fresh paroxysm, the more certainly may you expect advantage from quinine or arsenic; but a still stronger guide, I would observe, is the degree of regularity in the time of the returns of such paroxysms. Again, the appearance of the tongue affords an important guide. When it is thickly coated, as is usually the case at the commencement of remittent, you must not venture upon these remedies; but should the brisk calomel cathartic, which is here indicated, after a first or second dose, have the effect of breaking this crust, and of partially dislodging it, you may immediately throw in a full dose or two of quinine without waiting for the perfectly clean tongue,

which may, perhaps, never take place, as the succeeding paroxysm will frequently produce a new film over those parts, which were so recently becoming clean, and the opportunity of administering the quinine be for ever lost. With a dry, parched, or deep-red tongue, quinine is inadmissible in full doses with a view of influencing the progress of the fever; though it may, in advanced cases, with such a tongue, be sometimes serviceable in small doses, as a stimulant or cordial, and with a view to support the failing strength.

A still more important guide in the administration of the remedies now under consideration is the state of the alvine excretions; when these are unnatural, the appropriate remedies must be steadily persevered in according to the directions given in a former part of this letter, and the use of quinine be suspended until an evident improvement in their appearance has been effected, unless indeed decided remissions occur, giving a character to the case nearly approaching to that of an intermittent, under which circumstance one full dose of quinine may be thrown in during each intermission, but frequently repeated doses must be abstained from.

The proper doses of quinine, and the precise times for administering them, are a matter of some moment, though it is one upon which, at present, there is considerable discrepancy of opinion amongst medical men in the treatment of remittent fever,

as well as of ague. When the remission is incomplete, and of short duration, and the febrile heat during the exacerbation great, if the state of the secretions, the appearance of the tongue, or regularity in the periods of exacerbation, authorise the administration of quinine at all, I prefer a full dose, say four grains once in each intermission, and about an hour before the expected chilliness; but I desist after two or three doses, if the succeeding paroxysm is at all augmented in severity, or if it is not either postponed or mitigated in some degree.

If the remission is more complete, and of longer duration, I prefer giving two doses, of two grains each, at an interval of one, two, or three hours, in each intermission, with saline or antimonial febrifuges during the paroxysms. In more chronic cases, where the symptoms of fever are milder, and the intermissions not well defined, I administer single grain doses of quinine with a simple febrifuge every four hours, giving a strict injunction to omit the dose of quinine, if at any time the heat of skin is considerable. I am not a friend to the eight, ten, or twelve grain doses under any circumstances in remittent fever, and have scarcely ever been driven to the necessity of having recourse to such large doses in intermittents.

Since the discovery of this excellent preparation of bark, of which I have been speaking, I am very little in the habit of employing either the bark in substance, or any other preparation of it. And as

to Fowler's solution of arsenic, upon which I used formerly principally to rely for the cure of ague, and which formerly I prescribed in remittent under similar circumstances, and with nearly the same restrictions, which I have noticed above as necessary to be observed in the administration of quinine, I now very rarely give it, except with a view to economy. If, however, in remittent I entertain some doubts as to the propriety of giving quinine, or have reason to believe that it has aggravated the feverish symptoms, I do make trial of the solution of arsenic in doses of six or eight drops either in water or in the fever medicine, but I must acknowledge that I seldom find it to answer a good purpose, where quinine has failed. In long-protracted cases of remittent, where the liver is plainly in fault, I have not unfrequently pushed the use of mercury so far as to affect the mouth, and with the happiest effects; but to judge under what circumstances this practice should be resorted to implies more professional acumen than I can suppose you to possess, or than I can hope to communicate to you by any plain and simple directions.

I now proceed to treat more particularly of the cure of *ague*, and as I have observed above, that a variety of extraneous symptoms, such as diarrhœa, cough, delirium, &c., may accompany the paroxysms of ague, as well as remittent and typhus fever, I must now further observe that when they do arise, they are to be treated in the same way. In briefly

communicating to you my experience, and my plan of treatment in simple ague, and its multifarious consequences, I would not have you suppose, that I consider it in any respect novel, or in any degree preferable to the plan of other practitioners; but it is usual for every one, who has numerous cases continually occurring, to adopt a certain routine of practice, subject of course to various modifications under particular circumstances, and the routine, which I usually observe, I now submit for your guidance. When ague in either a quotidian, tertian, or quartan form takes place for a first time, or after an interval of years, in a tolerably healthy subject, I content myself with giving a full dose of calomel and colocynth with salts after the first paroxysm; and if the tongue becomes cleaner, and particularly if an eruption comes out about the mouth, and if the second paroxysm is less severe than the first, I still satisfy myself with giving another but smaller dose of calomel and colocynth, or, perhaps, a milder mercurial purgative, as a blue pill with colocynth and a dose of seidlitz, knowing, as I do from experience, that a spontaneous cure under such circumstances frequently takes place after one or two paroxysms; particularly if it be a tertian ague, and in the spring season. Should a third fit of ague succeed, however, I commence with the appropriate remedies; or if the patient has previously had ague at no long interval of time, I do not wait for even a second paroxysm.

As to the appropriate remedies for ague, amongst the vast number, popular and professional, of which each has its advocates, I may here observe, that sulphate of quinine stands pre-eminent, and that, since the fortunate discovery of this preparation, the bark in substance and all other preparations from it are nearly discarded. When this expensive chemical drug is not attainable, as will usually be the case in gratuitous practice, Fowler's solution of arsenic, or, as it is commonly called, the tasteless ague drops, affords the best, and indeed a very excellent substitute; or to meet the necessity of economical views without altogether abandoning the superior advantages of quinine, you may follow the plan, which I usually adopt in my dispensary practice, and commence the cure with quinine, trusting to the efficacy of arsenic for preventing the recurrence of the ague, after the paroxysm has been once interrupted; or in other cases you may alternate the use of these two drugs. Of other remedies I shall say but little; and shall dismiss the subject of popular nostrums with these brief observations; that such as operate on the imagination, viz. the wearing of amulets, the swallowing of spiders, and the like, so frequently fail, that it is, to say the least, risking the loss of valuable time; and that such as succeed by making strong impression upon the nervous system, are frequently so rude or so powerful, as to risk the safety of the patient by superinducing some more dangerous

disease; of which description are the sudden plunging of the patient into a river or a pond, or the daily large dose of pepper in ardent spirits.

In quotidian, or daily ague, then, give two grains of quinine, either in a pill or with a few drops (three or four) of diluted sulphuric acid in water every morning early, and eight or ten drops of the solution of arsenic either in water, or in an infusion of quassia (a cheap and useful vehicle, where for any reason you may wish to medicate the dose,) three times a day. If after two days the ague still returns, double the daily dose of quinine; and should this fail, which will seldom be the case, attend with greater minuteness to the state of the secretions, and if the motions are unnatural, combine with the above treatment the alterative plan of giving a blue pill, or two grains of calomel, every night, and a seidlitz draught every morning. In a few cases you will have occasion to increase the morning dose of quinine to six, eight, or ten grains, and now and then you will meet with an obstinate case, which resists even this dose, when recourse must be had to the varied use of other ague remedies, which will be enumerated presently.

In tertian ague, in which the paroxysm returns on alternate days, and which is by far the most frequent form, having given one or two calomel purges as described above, begin with two grains of quinine three times a day; and, as soon as decided impression has been made, give only one

dose of quinine, and two or three of arsenic daily, paying proper attention to the excretions, and treating any deviation from their natural appearance according to rules already laid down. Indeed in all old standing cases you will do well to give a blue pill on alternate nights and a seidlitz next morning during the whole treatment both before and after the cessation of the ague fits; and indeed I would here, as I have in a former part of this letter, again observe, that in discharging old or long-protracted cases, it is almost an invariable rule with me to furnish them with several such doses, and to impress upon them the importance of continuing their use once or twice a week for about a month after leaving off the quinine or arsenic; being well assured, as I am, that relapses are the frequent consequence of disordered hepatic or alvine secretions, though the immediate exciting cause may be an improper meal, an exposure to wet and cold, or a single over-potation; and being also convinced that an opportune dose of the above alterative has frequently obviated such a result.

Should the above doses of our appropriate remedies however fail, double the dose of quinine, and add two or three more drops to each dose of arsenic. Should you still not succeed, try the efficacy of one very large dose of the former remedy, say twelve, sixteen, or even twenty grains, a few hours before the expected paroxysm; and in case of this failing, try the efficacy of a pill con-

taining two or three grains of opium, and four of James's powder, to be taken three or four hours before the expected fit. Should this opiate succeed in preventing the paroxysm, it need not be repeated; but should it only postpone or mitigate its severity, repeat the pill on the approach of another paroxysm; the same observation applies also to the repetition of the very large dose of quinine. In all these cases the intermediate smaller doses of either quinine or arsenic, or both, are to be persevered in.

In quartan ague, where the paroxysm returns on each third day properly speaking, or after intervals of seventy-two hours, and which you will generally find to resist the above remedies more frequently than the other forms of ague, you will, nevertheless, adopt the same plan of treatment at the commencement, resorting to the very large dose of quinine, or opium, sooner; and indeed from the first, if you are undertaking a case of long standing. In quartan too you must pay early and minute attention to the secretions, and examine your patient with a view to other sequelæ or consequences of ague, which I shall proceed to notice immediately after the enumeration, which I am now about to give, of a few other remedies, to which I occasionally resort when quinine and arsenical solution fail me. Opium I have already mentioned, and have stated that two or three grains may be given on the approach of the cold stage.

A pretty powerful emetic, as two grains of emetic tartar with twelve grains of ipecacuanha, may, in other cases, be given about an hour before the expected fit, and may be repeated two or three times under the same circumstances, unless it should have wholly suspended the paroxysm the first time. Bleeding in the cold fit has been recommended, and I have known it to succeed in one or two obstinate cases; but I do not advise its adoption, except where visceral congestion is evinced by the occurrence of fulness, pain, and tenderness on pressure, particularly during the paroxysm, in the region of the stomach, spleen, or liver. Small doses of white vitriol, three grains every four hours, or a pill containing a quarter of a grain of ammoniated copper, three times a day, or a quarter of a grain of blue vitriol in a pill three times a day, may either of them be tried, or each in succession, where the common remedies have failed. In some obstinate cases, which have long resisted the ordinary treatment, and where the yellow tinge displays disease of the liver, or where a peculiar lead-colour of countenance denotes disease of the spleen, I have succeeded by persisting in a regular course of mercury, till the mouth became sore, and then giving some one of the usual ague medicines. When it can be effected, a change of air or removal from the fens to a higher and drier country will expedite and almost insure recovery.

The *sequelæ* or consequences of intermittents, to

which I have adverted, and which are very apt to succeed to long-protracted remittents also, are first structural as well as functional derangement of several of the viscera; and secondly, a morbid state of some portion of the nervous system, producing a vast variety of neuralgic affections, as intermittent face-ache, brow ague, intermittent sciatica, and other acute local pains.

Of the visceral diseases, enlargement of the spleen is perhaps the most common, constituting the large hard tumor in the left side of the body, vulgarly called ague-cake. I have seen it most frequently in children; it requires a frequent repetition of brisk calomel purges, in conjunction with the appropriate ague medicine, if ague still accompanies this morbid state; or a course of steel medicine, if the ague has been subdued; six grains of calomel made into pills, with colocynth, followed by an ounce of salts, may be given to an adult every third morning; and, after two or three such doses, a tea-spoonful of the rust of iron should be taken three times a day in a little thick gruel on the intermediate days.

Chronic disease of the liver is perhaps the most common sequela, both of remittent and ague, in adults. It is discoverable by occasional pains, and tenderness on pressure, by fulness, and sometimes by permanent hardness and irregularity over the region of the liver, the greater portion of which lies on the right side of the pit of the stomach,

close under the ribs. The attendant symptoms are a yellow tinge of the skin, particularly about the temples and the eyes, high-coloured urine, and variable discoloration of fœces, which are in some cases very pale clay-coloured, in others muddy-brown, in others deep green, and in others again, of a deep brown like tar, or even black; besides which the tongue is foul, the appetite precarious, and vomiting not unfrequent. For this state of hepatic derangement, a continued course of mercurial medicines is necessary, and my usual formula is one grain of blue pill, with four of extract of dandelion, taken with a mixture containing in each dose four grains of soda and four of rhubarb, in infusion of quassia, with a little syrup of ginger, or with a few grains of ginger in powder. This dose is to be repeated three times a day, and persevered in for several weeks, giving occasionally a moderate calomel cathartic with a full dose of rhubarb, say four grains of the former and half a drachm of the latter. When the stomach is irritable, the mixture may be taken in a state of effervescence by increasing the dose of carbonate of soda to a scruple, and adding at the moment of taking it a table-spoonful of lemon juice, or a scruple of tartaric acid previously dissolved in water; or the minute doses of calomel, recommended in bilious remittent may occasionally be resorted to in such cases of irritable stomach, if the matter vomited be morbid bile. When there is much tenderness over the liver, the

application of leeches to the part is indispensable, and may be required to be repeated occasionally during the treatment. The same ought also to have been observed in the treatment of painful enlargement of the spleen. With all our care and attention, however, this state of the liver is frequently not to be cured, particularly in persons above the middle age, and in those who have led intemperate lives, and in whom, therefore, this chronic disease in all probability commenced previous to any attack of ague.

And here I will make a more general observation, which is equally applicable to every species of fever; that whatever organ or function of the body is at the time, or has been previously, the seat of morbid derangement, or may be said to be habitually subject to disorder, will be sure to be particularly disturbed during the progress of fever. Thus vomiting in the dyspeptic, bilious symptoms in the intemperate, high delirium in such as have formerly laboured under delirium tremens, or in those hereditarily predisposed to insanity, rheumatic pains in rheumatic subjects, inordinate action of the heart, where there is structural disease of that organ, diarrhoea or purging in some, and dysentery in others, as they may have been previously affected, will constitute important or leading features in their present attack of fever. These should always be the subject of inquiry, with a view both of regulating our practice, and of aiding us in

estimating the danger of the case ; as, generally speaking, where such predisposition can be detected, there is less harm to be apprehended, than when such symptoms are the genuine offspring of the fever.

The disorders of the nervous system, attended with severe local pain, and therefore called *neuralgia*, next claim our attention. They are frequently concomitants as well as the sequelæ both of remittent fevers and of agues ; and very frequently they constitute the disease itself, in which case they are by some denominated masked ague. The brow ague, which is an intense pain over one or both eyes, is not an unfrequent occurrence in ague districts. The attacks of pain occur at pretty regular intervals, as a tertian, or quotidian, or a double tertian, or double quotidian ; the paroxysm is sometimes ushered in by yawning, and a sense of either local or general chilliness, which is sometimes succeeded by feverish heat, but more frequently by the paroxysm of pain only. Instead of the brow, one cheek, or one side of the face, or one side of the whole head, may be the seat of the pain, and at other times, the pain is confined to the eyeball, in which case the vessels of the eye are sometimes turgid with red blood, and the case is called intermittent ophthalmia.

These neuralgic diseases greatly resemble tic douloureux in their varied seat, and in the severity of the pain, but differ from it in their recurrence at

regular intervals, in not being easily, if at all, excitable at other times by a slight motion, a slight touch, or by the accidental action of a neighbouring muscle, as is the case in *tic douloureux*; and it differs also, very fortunately, in being much more under the control of medicine.

Sciatica is perhaps always a neuralgic affection, though most authors consider it a species of rheumatism; in its more chronic form, however, it is certainly to be treated as neuralgic; its seat is the large sciatic nerve, running down the back of the thigh, and calf of the leg to the instep. Neuralgia, sometimes, has its seat in the viscera; thus I have seen neuralgia of the heart, lungs, liver, bowels, uterus, and ovaries, simulating in these instances a variety of important diseases, and only to be distinguished from them by the periodicity of the returns of pain, and almost complete cessation of soreness and tenderness, as well as of pain, between the paroxysms.

The pain and tenderness of the part affected have frequently induced the medical practitioner to bleed at the arm in such cases, but never, I believe, with advantage, and often with the effect of protracting the disease; the same may be said even of local bleeding, whether by cupping or by leeches. The only successful practice is to give the same medicine as in *ague*, with the addition of anodynes.

If the stomach is disordered, I begin with an emetic: if the secretions are unhealthy, I commence

with one or two doses of calomel and colocynth, and in some cases I have recourse to both; and my first trial of the appropriate neuralgic medicine is usually a combination of quinine, with the extract of hemlock, two grains of the former with three or four of the latter, every three hours. If the recurrence of pain is not mitigated in the course of the first day or two, I conjoin the use of opium and calomel, by giving two or three, or even four grains of each on the approach of every paroxysm, and the quinine and hemlock in the intervals. After three or four days, if the improvement is not considerable, I resort to the free use of the subcarbonate of iron, or prepared rust of iron, instead of the quinine and hemlock. I have seen the most decided benefit from this medicine, particularly in neuralgia of the face, and of the sciatic nerve. The dose is a small tea-spoonful of the powder in a little thick gruel, or honey, or treacle, if sweets be preferred; and this is to be repeated every three or four hours, and may be persevered in for several successive days, giving a moderate cathartic occasionally, if the bowels are costive. The solution of arsenic stands third in the class of antineuralgic medicines with me, and then any of the other ague remedies which have been before enumerated.

Warm anodyne fomentations, and stimulating or anodyne plasters, are the external remedies, of which I have had most experience; and I have seen some cases decidedly benefited by acupunc-

turation. The fomentation should be a strong decoction of poppy heads and chamomile flowers; the stimulating plaster may be the emplastrum calefaciens of the shop; and the emplastrum belladonna is the best anodyne plaster. But I must not omit to mention the use of an ointment made of two grains of a new and powerful drug, called veratria, to a drachm of hog's lard, which I have lately used with great benefit in a variety of neuralgic cases. One-third of this ointment is to be well rubbed in over the part affected, night and morning, or on the approach of the pain, for two or three successive days. Of the use of the needles I must make this unsatisfactory acknowledgment, that I have never been able to say, *à priori*, whether their use would prove beneficial or not; but I can attest in their favour, that I have often been surprised at their efficacy. I therefore recommend you, in every obstinate case, to suggest to the surgeon the trial of this unaccountable but sometimes surprisingly successful remedy.

There is another state of the system consequent upon a protracted case, either of remittent fever or ague, to which I must advert before entirely leaving the subject. This is a peculiar state of invalidism, with very variable symptoms, usually mild, but particularly prone to be aggravated by very slight exciting causes, and occasionally running into decided remittent or intermittent, and thus constituting relapse after relapse, of greater or less

violence. These variable symptoms are sometimes of the nervous class, as an irritable state of temper, despondency of mind, wandering pains, tingling, or even a benumbed sensation in an arm or leg, partial cold and clammy perspiration of the hands, the knees, the inside of the thighs, or of the face only, with a momentary shivering, produced by the slightest draught of cold air, or a more complete rigour by a blast from the north-east. In other patients, the variable symptoms arise from temporary functional disturbance, produced from very trifling causes, as sickness, diarrhoea, heartburn, palpitation, and disturbed sleep, with more or less of chilliness succeeded by increased heat, and either partial or general dampness or perspiration, with a sense of syncope or faintness, and a great apprehension of not doing well.

This state of things, notwithstanding the strictest attention to diet, clothing, and exercise, and the promptest treatment of even minute deviations from health in the various secretions, will sometimes continue for one, two, or three years, and then terminate in a perfect restoration of health. I have, however, only seen this protracted invalidism which in my dispensary reports I denominate, for want of a more appropriate term, *chronic remittent*, where the patient has continued to reside in an aguish district, or has remained exposed to the same source of malaria which induced the original attack; and nothing effects so certain, so

sudden, and so permanent a recovery, as change of air, by which I mean a lengthened removal to what we fen-men call the high country. This change of residence is almost a "sine qua non," and I never venture to promise my patients a recovery without it. The improvement is often so sudden, that the patient is sensible of it the very first night after leaving home, and in two or three days his appetite is no longer capricious; he eats heartily, digests well, sleeps undisturbed, loses his disposition to clammy perspirations, and begins to increase in strength, and to recover his long lost buoyancy of spirit, and elasticity of mind. The duration of his residence in a congenial air must in most cases be regulated by private considerations; and as, in a majority of cases, the physician is required to say how short a banishment from home and its important avocations will suffice, I can only make these general observations, that a fortnight will do much good, but will not secure him from a relapse soon after his return, particularly in the winter and spring season; that a month will suffice in summer, and six weeks in winter, in a majority of cases; and further, that one absence of this duration is more effectual than the same, or even somewhat longer period, divided into two absences, with a short intervening residence at home.

As circumstances frequently make even this short absence from home impracticable, I must not omit to give a few general instructions for the

management of such protracted cases of indisposition. Warm clothing, careful avoidance of exposure to cold, particularly in damp weather, and during the prevalence of north or north-east winds, regular exercise without much fatigue, plain but generous diet, with an additional glass of sound beer or porter, or port wine, according to the circumstances and previous habits of the patient, cheerful company, recreation, and amusement, all tend greatly to prevent an aggravation of symptoms, and to promote recovery. The medical treatment must, of course, vary with the symptoms, and be regulated by their degree of severity; but this must always be held in view, that a blue pill and seidlitz draught will be required once or twice a week, to maintain a healthy state of the secretions; and that this with mild tonics, as grain doses of quinine, or a few drops of diluted sulphuric acid, or of steel drops in water, twice or thrice a day, for a week or ten days at a time, at longer or shorter intervals, will ordinarily prove the most efficacious treatment.

LETTER X.

ERUPTIVE FEVERS AND CHRONIC ERUPTIONS.

OF those specific fevers which are attended with an eruption on the skin, I shall first speak of SCAR-

LATINA, OR SCARLET FEVER; and be it here observed, that these terms are synonymous, and that scarlatina is not, as many imagine, the diminutive of scarlet fever, designating a milder disease. The term specific, as used in this place, means a fever arising from a contagion sui generis, producing only a disease of like kind. The symptoms of scarlet fever are those of an ordinary paroxysm of fever; usually attended with, or very speedily succeeded by, sore throat, and on the second or third day, by scarlet efflorescence, first in patches about the elbows, then on the bosom, and in a few hours over the whole or greater part of the surface of the body. The paroxysm of fever usually occurs between the end of the first and beginning of the third day after exposure to the contagion, but sometimes a little later. The matter of this contagion would appear to be both very subtle, and very permanent, or lasting; for I have known instances of children taking the disease on coming into contact with others, who had the disease many weeks previously; or immediately upon taking possession of apartments, where scarlet fever patients had resided many months before; notwithstanding the use of the warm bath, and the substitution of fresh clothes in the former cases; and the careful adoption of airing, painting, and white-washing in the latter cases.

Persons of all ages who have not had the disease are liable to it, and it is a very rare circumstance

for the same person to have it a second time. Upon this subject, however, I have an observation to offer, which may enable you to explain many *apparent* contradictions to this law. I have said above, that a sore throat as well as an efflorescence on the skin, is a usual attendant of scarlet fever: now it is not uncommon for persons exposed to the infection to have one of these symptoms, and not the other, in which case such persons so frequently have a second attack of the disease, that I do not pronounce a patient safe from a future attack, who has not both the eruption and the sore throat. The peculiar sore throat of scarlet fever, too, may occur frequently in the same person, and I know some, who have long ago had the genuine disease, so subject to ulcerated throat, that an attendance upon a scarlet fever patient always induces an attack. These secondary attacks of sore throat are frequently ushered in by a very smart paroxysm of fever, but never prove fatal, nor the fever severe after the first few hours; but such attacks frequently give rise to the opinion that these persons have had more than one attack of scarlet fever.

Scarlet fever, like every other infectious disease, has its seasons of prevalence, and also its localities, being very general throughout the kingdom in some years, and at other times very prevalent in certain places, whilst many other districts are wholly exempt from it. Populous cities are seldom if ever without a few cases, and thus is the contagious

matter kept afloat, to be freely disseminated under certain unknown atmospheric influences favourable to its propagation; though I am not prepared to maintain that this, or any other contagion, never now arises spontaneously, that is, either from the same undiscovered combination of circumstances, or from the same almighty creative fiat which may have first called each specific contagion into existence.

Scarlet fever is sometimes ushered in with a convulsive fit, and the first paroxysm of fever is frequently attended with vomiting, particularly in children; the pulse is more rapid in this than in any other fever, being frequently in young children 150 or 160 in the minute, and sometimes so quick as not to be accurately measured; the tongue is peculiarly red in most cases, or the bright red papillæ are seen standing out prominent from a cream-coloured crust; the whole lining membrane of the mouth, fauces and throat, as far as it is discernible, is in severe cases at first bright red, and then deep purple, with numerous aphthæ or small ulcers, covered with tenacious ash-coloured crusts, similar to what in children are called by nurses the thrush, and also with one or more large and deep foul ulcers at the back of the throat; the inflammation and ulceration often extend over the mucous membrane lining the nostrils, producing a distressing and very disagreeable discharge from the nose; often, too, it extends to the back of the throat, by

a duct called the eustachian tube, to the delicate structure of the ear, producing ear-ache, abscess, and discharge of matter from the external ear, always with temporary, and not unfrequently with permanent deafness. When the inflammation extends in another direction, and affects the glottis, or commencement of the windpipe, it produces the peculiar breathing, and other symptoms of croup; and I have a perfect recollection of this epidemic once prevailing, particularly in the neighbourhood where you now reside, in which many children with severe scarlet fever died of this croupy affection.

The eruption is not always an efflorescence only, for sometimes a numerous crop of minute vesicles accompanies the diffused redness, producing a roughness over the surface. The rash, in some mild cases, is scarcely discernible, and in many others is so evanescent as to require frequent examinations to detect it; you will in such cases be most likely to discover it in the evening, or at night, at which time there is most fever. After three or four days the rash fades away, and the cuticle or scarf skin gradually desquamates or peels off; and, in very severe cases, the nails also fall off wholly, or in part.

This fever may be of every degree of intensity, and, like every other epidemic, varies in this respect in different visitations. In the year 1803 it prevailed greatly, proved very fatal, and in some

few cases which I saw, the patient died on the second day of the disease. At other times, I have known it pass through a family without being detected but by the desquamation of the cuticle, or until some one case, severer than the others, arrested the attention.

The treatment of mild cases consists simply in confining the patient to a light diet, and giving mild aperient saline medicines. In severer cases you must meet the prominent symptoms with a similar treatment to that recommended in other fevers already described. The great heat of skin will be essentially relieved by cold affusion or cold sponging in the early stage, and by warm sponging in the latter stages. The delirium will require leeching, and, if it occur early in the disease, in a robust person, and when the prevailing epidemic has not proved remarkable for its typhoid character, one general bleeding may be ventured upon; but an opiate, as I stated in treating of other fevers, will more effectually relieve the delirium in severe and advanced cases, particularly when accompanied with a parched tongue, brown sordes about the teeth, and great prostration of strength. Calomel cathartics will be required in every case, where there is not a natural diarrhoea; and gargles must be freely used, where the throat is much affected; a dram of muriatic acid in half a pint of water makes a good gargle; and the popular one, made of sage-tea vinegar and port wine, is nowise ob-

jectionable. When children cannot be made to gargle, I always insist upon the use of a syringe, and you will be doing an essential service by enforcing this point, and instructing the attendant practically how to use the syringe. One holding half an ounce is the proper size, made either of pewter or bone; it should be inserted well over the tongue, squirted out smartly, and repeated three or four times a day, three or four syringefuls being used each time. In all other respects the treatment may be regulated by the instructions which I have given in treating of remittents, or of fevers generally.

There is one remarkable sequela or consequence of scarlatina, which occurs frequently, and therefore deserves particular mention, which is dropsy. At an uncertain period after convalescence, it may be some days or some weeks, the eyelids become swollen, particularly in the morning, the whole face in another day or two œdematous, that is, pale, swollen, and pitting or dinting on pressure; about the same time the feet and ankles swell towards night, in another day or two the skin is everywhere tense, and pressure with the finger, or any ordinary ligature of the dress, leaves pits and indentations. This general state of dropsy is called anasarca; it is often very slight, and easily removed by proper remedies; sometimes it is rapid in its progress, and advances to an alarming and dangerous extent. I well remember one case of a boy, about twelve

years of age, after a severe attack of scarlatina, crawling into the fields to glean, in a very hot day during harvest, as thin and emaciated as can well be conceived, and being brought home in the evening bloated and swollen to such an excess, that his clothes were all necessarily unbuttoned, his eyelids were nearly closed, and his breathing most laborious; he was unable to lie down, and was altogether in a state of great danger. The purgative medicines, on which I most rely in this species of dropsy, were speedily administered, and diligently persevered in, with the happiest result. A tea-spoonful of the following electuary was given every hour, with the addition of six grains of calomel to the first dose, until the boy had been more than twenty times to the night-table; and in the morning I found him lying on his back, breathing freely, and the swelling altogether gone. The debility, which remained, was of course exceedingly great, but the gradual and judicious administration of a nourishing diet, with bark and steel medicines, and an occasional cathartic, ultimately restored him to perfect health. The electuary consisted of a dram of jalap, half a dram of ginger, and an ounce of cream of tartar, with as much syrup as to give it the proper consistence. I have here given an extreme case, both as to rapidity and extent of symptoms, and also as to the celerity with which they were removed. Slighter cases are not uncommon; they always demand early attention, and may be

usually cured by the moderate use of the same remedies; the dose, however, should always be regulated by its effects, four or five watery evacuations daily being required for the cure of even slight cases. Sometimes the dropsy is not confined to the cellular substance under the skin, but water is deposited in the cavities, as the abdomen, the chest, or the ventricles of the brain, constituting very dangerous and often fatal disorders, the treatment of which comes not within the scope of my present plan, and which I therefore dismiss with this observation, that I have found the same purging mode of treatment most efficacious in dropsy of the belly, digitalis in dropsy of the chest, and small doses of calomel and digitalis in dropsy of the brain succeeding to scarlet fever.

Another consequence, or rather in many cases concomitant, of scarlet fever, is glandular swellings about the neck and throat. These often appear early in the disease, dependent, no doubt, upon the ulcerated condition of the mouth and fauces; sometimes they commence later in the disease, and in either case are the source of much distress and inconvenience, long after the fever has subsided, and the patient become convalescent. These swellings are to be treated in the same way that other glandular swellings are managed. In the early stage apply leeches and cold lotion, but as soon as fluid is perceptible, adopt warm fomentation and poultices; and let the matter be evacuated by

puncture with a lancet, as soon as ever the tumor points, or even sooner, if the fluctuation be very evident.

The second eruptive fever, to which I shall draw your attention, is the MEASLES. This also very seldom occurs a second time to the same individual, and is therefore generally a disease of childhood. The earliest symptoms are usually a slight chilliness, succeeded by fever, with sneezing and watery eyes, and then cough, and perhaps a sensation of roughness and slight soreness of the throat; all which being also the early symptoms of a severe cold, we can at its commencement be led to suspect measles only by the known presence of the specific contagion, and the known liability of the patient to receive it. The fever, however, is more permanent than in a common cold, and increases in intensity, except in very mild cases, and on the third or fourth day an eruption appears in patches, not unlike that of scarlet fever, except that at first the patches are smaller, and consist rather of numerous spots than a diffused efflorescence; and afterwards, when it assumes more the nature of efflorescence, the patches affect somewhat of a serpentine figure, and only occasionally spread over the whole surface. This peculiarity in the eruption, with the presence of the catarrhal symptoms, and absence of ulceration of the throat, will seldom leave it difficult, even for a tyro, to hesitate in determining between measles and scarlet fever. The catarrhal

symptoms, as cough, pain in the chest, and hurried breathing, with the accompanying fever, when they increase, constitute the danger in most cases of measles. An aggravated state of these symptoms is very apt to take place in cold seasons, or from imprudent exposure to cold and damp in any season, and particularly in children predisposed to consumption, or other chest disease. Measles, as has been observed of other epidemics, has its seasons of prevalence, is very often a mild and trivial disease, and in many other instances, and in particular seasons, it is formidable, and very fatal.

Besides the danger arising from an aggravation of the chest-symptoms, as mentioned above, constituting inflammation of the bronchi or air-cells of the lungs, and which is by far the most frequent source of danger, particularly in the winter and spring, there is in some epidemics, or seasons of prevalence, a strong disposition in the fever of measles to assume a typhoid character; this is more particularly what is meant by the common expression of a bad sort of measles, and the same applies to scarlet fever, and also to small-pox, and perhaps to all other epidemics. On what peculiarity of season or state of atmosphere this typhoid disposition depends, we cannot fully explain, but it has been observed to occur most frequently in hot autumnal weather, and after seasons of general dearth. It sometimes happens, that there is at the same time a strong disposition to both the inflammatory and

typhoid symptoms, and this combination constitutes the most unmanageable and most fatal variety of measles. The eruption, which in ordinary cases gradually fades away about the fourth day, and is followed by slight desquamation of the scarf-skin, either suddenly disappears in these untoward cases, or becomes of a dull brown or livid colour.

The treatment of measles, you will readily conceive, after what has been already said of the different character and intensity of its symptoms, must of course greatly vary, and that according to the degree and the preponderance of the inflammatory or typhoid symptoms.

In very mild cases, all that is required is, to keep the patient in the house for a few days, to administer mild aperient febrifuge medicines, and to put them upon a moderately low diet. In cases a little severer, attended with cough and somewhat more fever, I order my patients to keep in bed great part of the day, and not to leave the bedroom at all; I endeavour to procure a gentle perspiration by warm gruel and weak tea through the day, and by immersing the legs in warm water at night, and then giving a dose of James's powder or other antimonial.

It is common in an ordinary cold, and under other circumstances, to talk of putting the *feet* into warm water as a piece of medical treatment, and usually the prescription is literally attended to, a

shallow foot-bath being employed, and with so little water, that literally the feet only can be immersed in it. I am in the habit of ordering the whole legs to be immersed in a deep bucket full of water, as hot as can be comfortably borne, and the patient's whole body to be enveloped in a blanket, which at the same time covers the bath or bucket. The effect of such an immersion for ten minutes is usually to bring on a general and pretty profuse perspiration, and thus to answer in many cases the full effect of a general warm-bath.

When the severity of the cough and an accompanying pain in any part of the chest, with hurried breathing and quick pulse, indicate inflammation, one general bleeding, or abundant leeching, must immediately be had recourse to, according to the age and constitution of the patient, and antimonials in full doses, namely, a quarter of a grain of emetic tartar every four hours to an adult, with all the other remedies for bronchitis, must be vigorously employed.

When, however, great prostration of strength, muttering delirium, brown sordes about the teeth, a dry tongue, and a sudden retrocession or livid appearance of the eruption, proclaim a typhoid character, the warm-bath, a little warm wine and water, sal-volatile in the fever medicine, and small doses of quinine, will be required; and should these symptoms be at the same time accompanied with a distressing cough and hurried breathing, the utmost

judgment and greatest attention of the regular practitioner will be requisite to decide upon the proper treatment.

We now come to consider the subject of SMALL-Pox, and, before describing the disease, shall make a few observations on the great preservative from its worst effects, the *vaccine disease*, or *cow-pox*.

Before the fact was made known to the medical profession and the public at large, that the contagion of small-pox loses its influence over the constitution of persons, who have either accidentally or purposely been subjected to a disease called the cow-pox, the former was with reason dreaded as one of the severest maladies, and its prevalence as an epidemic one of the most dreadful inflictions, to which a populous country could at any time be subjected.

Dr. Jenner, by patient inquiry, first satisfied himself of the truth of a prevailing notion amongst the dairy farmers of Gloucestershire, that milkers, who contracted a disease on the hands from the sore teats of the cows, were exempt from the influence of small-pox; and then by original experiments he convinced himself that artificial inoculation with matter from such pustules on the cow's teat produced a similar pustule on the part inoculated in the human subject, attended with a slight constitutional disturbance, which together were productive of the same preventive effect against small-pox; and, lastly, by further experiments, he

arrived at the conclusion that matter, or rather lymph, for it is a thin transparent fluid, taken from the artificial pustule or vesicle thus produced in man, was equally efficacious as that originally obtained from the cow itself.

Dr. Jenner has, by the publication of this truly philosophic discovery and investigation, conferred an invaluable boon on mankind; and if posterity do not derive from it all the benefit it is calculated to afford, the fault will not rest with the immortal Jenner.

It is a pretty general failing with us, upon all occasions, to be too sanguine of expected good, and then too much dejected by the disappointment necessarily arising from our own exalted expectations; and such conduct now threatens to deprive us of much of the advantage that might otherwise be derived from vaccination.

The public were no sooner in possession of the fact, that very many vaccinated patients exposed afterwards to small-pox infection had really resisted its influence, than they illogically jumped at the conclusion, that it would never fail of having such protecting influence. The medical public, with the great Jenner himself, partook of this sanguine expectation, and must bear the blame of having supported and propagated this hasty and erroneous conclusion. In the course of a few years, however, several cases of small-pox occurred after vaccination; these were at first referred by the advocates

of complete exemption to inattention in the vaccinators, or a want of discrimination between a genuine and a spurious vaccine pustule, which had this fact for its basis, that vaccination does sometimes produce an irritable ulcer, either from constitutional disturbance, or from accidental injury to the pustule, which does not at all afford the promised protection. In the progress of a few more years, however, failures were observed in persons vaccinated by eminent surgeons, and even by Jenner himself, where the pustule had been pronounced genuine, and full protection had been promised: such cases drove the profession reluctantly to acknowledge, what they ought in the first instance soberly to have expected, that the protection afforded by vaccination would not prove greater, but promised to be equally complete with that afforded by a first attack of small-pox itself, either in the natural way, or by inoculation. And in support of this deduction so very many cases of secondary small-pox were brought forward and well attested, as to satisfy both the supporters and opponents of vaccination, that the protection afforded by small-pox itself is not so complete as had been generally apprehended before such inquiry was instituted. It may, however, be still fairly maintained of small-pox, as also of measles, scarlet fever, and hooping-cough, that second attacks are only the exceptions to a general rule.

In the experience afforded us by nearly forty years

of extensive vaccination, during which many small-pox epidemics have prevailed in various districts, it must be allowed that we have further ascertained that vaccination fails of its *full* protection from small-pox more frequently, than natural or inoculated small-pox fails to protect from a second attack, though in what proportion we have not the means of ascertaining; but we have at the same time obtained satisfactory proofs, that in a vast majority of the cases of small-pox after vaccination, the disease is so mitigated as to be a very trivial ailment; and further be it observed, there is reason still to doubt whether *severe* cases of small-pox after vaccination are in greater proportion than severe secondary cases of the disease after the natural or inoculated small-pox.

Such, however, I repeat, is the proneness of man to be too much depressed by disappointment, as well as too much elated by promised good, that the reputation of vaccination is now undeservedly losing ground with the public at large; and the practice, especially in this kingdom, the birth-place of the discovery, is less general amongst the poor than it was a few years ago, so that we are now in some danger of losing the immense benefits of the Jennerian discovery, which it is calculated to afford, because it has failed to fulfil all the high-wrought expectations which we had unwarrantably indulged in.

To obviate an event so much to be lamented, as far as lies within our humble efforts, we will now

consider the facts dispassionately, and endeavour soberly to draw just inferences. The natural small-pox is at all times a disease to be dreaded, and is universally acknowledged to be, in certain seasons and localities, a very fatal pestilence. The introduction of inoculation, by which I mean small-pox inoculation, is acknowledged on all hands to have produced a much milder disease in a considerable majority of those persons who submitted to it, and it may thus have saved thousands of individuals, who would have fallen a sacrifice to the disease in its natural form; but still it is a fact, that inoculated small-pox is frequently a severe disease, and often leaves indelible marks of its having been so, and that many inoculated patients have died; in some seasons one case in thirty; and upon an average of seasons, one in two hundred has been supposed to prove fatal. Now, as before the introduction of inoculation the visitation of the small-pox was only occasional, and thousands of persons passed through life without encountering its influence, it can hardly be doubted that many of those individuals who died after inoculated small-pox, would have altogether escaped the disease. When, in connexion with this fact, we further take into consideration, that through the medium of inoculation small-pox infection was kept constantly afloat, and that the natural disease was thereby rendered a permanent instead of an occasional visitant, annually carrying off many victims, who heedlessly

neglected inoculation, it becomes a matter of great doubt, whether the discovery and introduction of artificial inoculation decreased, or increased, the total mortality by small-pox.

Now let us see how the matter stands as regards vaccination. The constitutional disturbance from this cause is so slight, that not even the least inconvenience ensues in a vast majority of cases; serious indisposition has been recorded in but a very few cases, and I believe that only one or two instances of death have been attributed to this cause; and when we consider how suddenly and unexpectedly infants and young children are sometimes carried off, it is rather matter of astonishment that in the many hundreds of thousands vaccinated, sudden deaths during the progress of the cow-pox should not very frequently occur from other and ordinary causes, many of which, if they did happen, would undoubtedly be attributed to the vaccination. Some medical men on this ground support the opinion, that vaccination with its attendant febricula is at the time a protection from other disorders, and there is some reason in the argument. At all events, we may deduce from above thirty years' experience in vaccination, that its immediate effect is not to increase the number of deaths, which inoculation for small-pox decidedly does.

In the second place, cow-pox not being, like small-pox, an infectious disorder, it may be had recourse to under any circumstance and at all times without

endangering the population at large, or increasing in the slightest degree the risk of the heedless who neglect, or of the objectors who conscientiously decline, either to inoculate or to vaccinate.

A third argument in favour of cow-pox, which arises, like the last, from the absence of infection, is this, that the more general its adoption the less pabulum remains for epidemic small-pox, consequently the less extensive its ravages, and the greater number of localities will be altogether exempt from its visitations; indeed there is reason to believe that were vaccination general, small-pox would cease to be a fatal or dangerous disease, if it were not—as some medical philosophers maintain it would be—totally eradicated.

On the other side of the argument, we admit that late experience has proved the fact, that very many cases of mild or modified small-pox after vaccination occur during the prevalence of epidemic small-pox, and that the proportion of these is greater than after inoculated small-pox; we will admit also that many of these cases are very severe; and a few—very few—fatal cases have been satisfactorily attested. These aggravated and fatal cases, however, are by no means in a greater proportion, if so great, after vaccination as after inoculation; and the disorder is so trivial in the great majority of cases of small-pox after vaccination, that it would not prove in my mind a formidable objection, were we to admit that every person exposed to small-pox infection

after vaccination would have the disorder in this modified form.

After such a review of the argument, I have no hesitation in strenuously advocating vaccination, both on the grounds of individual safety to the party vaccinated, and of public benefit, in as far as it diminishes the frequency as well as extensiveness of epidemic small-pox, and thus decreases the danger and fatality amongst the unprotected; and it becomes the duty of every one entertaining these views to recommend its adoption wherever he possesses influence. It is therefore particularly incumbent upon you, in your pastoral duties, to place the question in its proper light before the uneducated and the uninformed. You may confidently assure them that the cow-pox, notwithstanding numerous instances of mild small-pox occurring after it, is perfectly innocent in itself, which is not the case with inoculated small-pox, and is equally successful in warding off or preventing danger from natural small-pox as inoculation itself; and you may further explain to them how effectual it must necessarily prove in preventing any future visitation of bad small-pox in the parish, if every individual now in it, who is liable to small-pox, would submit to vaccination, and if every infant afterwards was to be protected in the same way soon after its birth.

On the subject of enforcing vaccination, I may state as a fact, that in Russia, Prussia, Bavaria, and other countries, where the legislative enact-

ments are most strict, natural small-pox is now seldom seen ; and I will venture this observation, that such enactments for the public safety do not interfere more with the liberty of the subject than many which now exist in this country, which, by laying a restraint on personal conduct, provide for the safety of the individual, as well as avert danger from the public, such as the prohibition of riding on the shafts of wagons, &c.

The trustees of our public charities ought at all events to use their influence, and the public could not reasonably object to previous vaccination being required by them of every applicant for admission, whether into our national and other charity schools, into asylums, alms-houses, or other charitable institutions ; and the proper officers ought also to be empowered to enforce vaccination upon all inmates of our poor-houses and our prisons, as has long been practised on admissions both into the army and the navy.

The usual negligence as to such matters amongst the poor, operating with a want of confidence in vaccination, tends to make natural small-pox more prevalent in this country now, than it was fifteen or twenty years ago ; hundreds of deaths take place from it annually in one or other of our large towns, and it is an occasional epidemic visitant in every part of the kingdom, proving fatal in many seasons to about one in four of those who take it. In Norwich about one thirteenth of the whole population

had natural small-pox in the year 1819, as stated in the admirable history of that epidemic written by Mr. Cross, an eminent surgeon of that city, and five hundred and thirty individuals died of it.

The *symptoms* which precede the eruption of *natural small-pox* are those of general febrile indisposition, usually severe. The illness sometimes commences suddenly with pain at the pit of the stomach and vomiting, or with acute pain across the loins. After forty-eight hours, an eruption of small red papulæ or spots begins to make its appearance, at first on the face, and successively on the trunk and extremities, fresh spots continuing to make their appearance for two or three days. Each pimple becomes a vesicle, gradually enlarges, and is distended with fluid, which is at first a clear lymph, but gradually assumes the appearance of opaque pus or matter. As the pock thus matures, it becomes surrounded with a crimson areola, and itself assumes a remarkable and characteristic depression on its centre; this process of maturation occupies from six to eight days, after which the pock shrivels up and becomes a scab, which falls off in eight or ten days more, and in many cases leaves a scar or pock-mark. The number of these papulæ or pocks vary in different cases from a dozen or a score to so many thousands of them, as to cover the whole surface of the body; when moderate in number they constitute a case of distinct, and when so numerous as to run into one another,

a case of confluent, small-pox. Although the degree of previous fever, called the eruptive fever, bears no proportion to the amount of eruption, being frequently severe in distinct small-pox, yet the degree of confluence forms a criterion by which to judge of the severity which will attend the secondary fever, and its correspondent danger. Upon the appearance of the eruption, the preceding febrile symptoms are greatly relieved; but as the inflammation around the base of the pustules and the suppurative process advances, symptoms of secondary fever appear, and progress to more or less of danger, assuming an inflammatory or typhoid character, according to the constitution of the patient, the season of the year, and the peculiar character of the epidemic.

The treatment of small-pox must be regulated by the same directions which were given for treating the different kinds of fever, there being no specific remedies for the cure of this disease. You may therefore discountenance entirely the saffron tea, saffron stays, raw bacon applied externally to the throat, and the sheep-trottle drink, all of which I have not only heard extolled, but known to be actually employed.

Calomel cathartics with saline aperients, and the usual fever medicines, with attention to cool apartments and a light diet, will be all that is required in mild and moderately severe cases. Where sleeplessness and low delirium attend the secondary

fever, I am even more frequently inclined to give an opiate every night than under similar circumstances in simple fever, and I usually give at the same time two grains of calomel. Bark has been recommended in the severest cases of small-pox, and I think I have seen the same good effects from moderate doses of it as in typhus or typhoid remittent, in which I have advised one or two grains of the sulphate of quinine three or four times a day as a tonic.

The inoculated small-pox is now seldom, and ought never to be, seen. I shall therefore give no description of it, and shall only observe, that when inoculation was practised severe cases of the disease were not unfrequent, particularly in some seasons, and that about one case in two hundred proved fatal on the whole average of inoculations.

VACCINATION, or the operation of inoculating with vaccine lymph, is in itself so simple, the necessary attention to the progress of the vaccine pustule so completely within your power, and the rules for discriminating between a genuine and spurious pustule may be so satisfactorily laid down to the comprehension of every man of education, that you need have no doubts or fears as to your becoming a safe and successful vaccinator; and the means of obtaining gratuitous vaccination for the poor are now so universal, principally owing to the praiseworthy liberality of our profession, that delicacy towards your friends, the surgeons of your neigh-

bourhood, need not deter you from the undertaking.

In addition to the all-important consideration of saving your parish from future visitations of small-pox, and thus becoming the instrument of preventing much suffering and saving many lives, I would urge this argument upon you for undertaking the office of gratuitous vaccinator of the poor, that you may prevent its falling into the hands of ignorant, uneducated, and interested persons, who, if they are aware of the importance of watching the progress of the disease, will not bestow the necessary time, and who are in all probability altogether ignorant of the essential characters in the pustule, which promise safety and protection.

Persons may be vaccinated at any age, but as it is on every account desirable that it be done in infancy, I would state the period between three weeks and three months as the most eligible, or at any rate before the time of teething. It is of importance that the patient be in good health, and free at the time from any eruption on the skin, either of which circumstances will be sufficient reason for postponing the operation, unless there is immediate danger from the infection of small-pox, in which case I would admit no consideration whatever to be a sufficient reason for its postponement.

It is always best to vaccinate with lymph immediately as it is taken from another patient, but when this cannot be done, it is of importance to

have the lymph as fresh as possible, being then less liable to fail. It is best preserved between two pieces of glass, or on bone or ivory points in a well closed phial.

In selecting a vaccine pustule from which to take your lymph, take care that it be a perfect one, and not advanced beyond the stage when it contains thin transparent lymph; make three or four superficial punctures with the point of a clean lancet held slantingly, that you may not wound the bottom of the pustule, wait patiently till the minute points of lymph from the distinct cells have collected into drops on the surface, and then either imbue your ivory points with it, or moisten your piece of glass by gently drawing it over the surface of the pustule, immediately apply another plate of glass, and preserve them in close contact. I would here observe, that you should not take lymph from a solitary pustule, lest, by breaking it up before it has gone through all its stages, you endanger its full protective influence. This is a sufficient reason for always making more than one incision in every person you vaccinate, and it is a good rule never to make less than two or more than four, by which means you are almost certain of having one or two pustules to supply you with fresh lymph, and one left to pass unbroken through all its stages.

When you vaccinate, it is immaterial whether you puncture the arm by many slight touches with the point of the lancet held perpendicularly, or

elevate the scarf-skin or cuticle by a cautious insertion of the lancet-point horizontally ; but it is of moment that you do it so delicately as not to draw blood at all, or only in the slightest degree possible. If you use lymph preserved on glass, you first moisten it by breathing on it if it be fresh, or by rubbing it with a single drop of water if it be old and very dry, either with the ivory point which thus becomes armed, or with the lancet, but I prefer the former ; you then carefully insert the point under the raised scarf-skin and wipe off the lymph into the wound or scratch, or you rub its surface over the little punctures, if you have adopted that plan, which has its advocates. If you prefer arming the lancet-point, this may be done before making the punctures or elevating the scarf-skin ; but still, to be more secure, lymph should be again applied as directed above, and particularly if a drop or two of blood has effused, as the lymph may thus have been washed away. Care must afterwards be taken to prevent the contact of the infant's clothes before the arm is dry, and as regards the operation nothing further is required to be observed.

To watch the progress of the vaccination satisfactorily, you ought to see your patient on the fourth or fifth day, and every two or three days afterwards, till the crust or scab is fully formed, that you may be assured of its passing through all its stages according to the following description, without interruption from either constitutional

causes or external violence. A small red spot is apparent on the second or third day after vaccination, which is slightly elevated, and on the fifth or sixth a small vesicle is formed of a pearly hue with a slight central depression. On the eighth or ninth day the vesicle is surrounded by a vivid red areola, which rapidly spreads, so that in a day or two more it is about an inch and a half in diameter. The vesicle is now at its height, consisting of numerous cells, which are filled with a transparent lymph; it is circular and still exhibits the depression in its centre, and the areola remains hard and tumefied for two or three days, and then begins gradually to fade and subside. The vesicle begins to darken first at its centre, and changes in a few days to a hard, smooth, mahogany-coloured crust, which falls off in the third week, leaving a superficial indented cicatrix or scar.

What has been termed *modified small-pox* is an eruptive disease which frequently occurs during the prevalence of small-pox, and has been observed to occur in persons who have had small-pox natural or inoculated, as well as in those who have been vaccinated. The disease is sometimes ushered in with as severe an attack of fever as genuine small-pox, but frequently the symptoms are so mild as scarcely to attract attention. After three or four days the eruption appears, which runs through its progress much more rapidly than the genuine disease; the constitutional symptoms subside when

the eruption appears ; on the fourth or fifth day the pocks or vesicles, which contain some a thin pellucid, and others a straw-coloured fluid more or less opaque, begin to shrivel up, and in a few days more the scabs fall off, there having been no inflammatory blush round the basis of the pock, and no secondary fever. The treatment, if any be required, will be to give a dose or two of salts during the fever, to prescribe a light diet, and to keep the patient cool and quiet.

The CHICKEN-POCK, swine-pock, horn-pock, and blister-pock are generally allowed to be all varieties of the same disease ; and indeed the spurious or modified small-pox which I have just described as occurring in very many persons upon exposure to small-pox contagion, after having been vaccinated, or having previously passed through small-pox either natural or artificial, has been supposed upon high authority to be identically the same with chicken-pox, and all arising from small-pox infection. However this may be, I must impress these facts upon you :—first, that an unprotected child, by which I mean one that has not had either cow-pox or the genuine small-pox, may have the eruptive disease we call chicken-pox, and still remain liable to genuine small-pox ; and secondly, that any person having at different times chicken-pox and small-pox or cow-pox, may, upon after exposure to small-pox infection, have the modified variety of the latter disease. Further observations and experi-

ments are still required to clear up the doubts that at present exist, with regard to the identity or specific differences, and the protective powers, of these milder eruptive diseases. The varieties depend upon the form of the vesicle, which is sometimes a minute transparent dot upon a reddish or slightly inflamed base, sometimes pointed and somewhat larger, at other times flatter and much larger. The contents of the vesicle are at first transparent, but in a day or two become straw-coloured, and about the fourth day dry up, and in another day or two become small brownish scabs. The disease is usually so slight as to demand no medical treatment, but sometimes there is a little fever requiring mild aperients and an unstimulating diet.

Having now treated of eruptive fevers which are produced by specific contagion, and which as a general rule occur only once in the same individual, and are therefore most commonly the diseases of childhood, the transition is easy to other eruptions on the skin; and I shall first give some account of those, which, though sometimes ushered in by constitutional disturbance, are not necessarily accompanied by fever,—are seldom, if ever, contagious—may occur more than once in the same individual,—and which, running through a certain course, may in that sense be termed acute. These are erysipelas or St. Anthony's fire, miliaria, urticaria or nettle-rash, and herpes. And I shall afterwards make a few observations on some of those eruptions which

may in contradistinction be called chronic, because they last for an indefinite period unless restrained by proper medical treatment, as porrigo or ringworm of the head, scabies or itch, lepra, and psoriasis called also humid tetters.

Under the title of ERYSIPELAS or St. Anthony's fire, I shall for brevity and perspicuity's sake treat of several varieties of eruption commonly known under this term, though distinguished, and very properly so, in systematical works. They are always, unless in very slight cases, ushered in by one or two days of mild fever and disordered stomach, and some persons are so much more subject to the complaint than others, that they seldom pass through a spring and summer without a spontaneous attack. In many persons too the disposition is so strong that the bite or sting of insects, and more particularly the bite of leeches, is uniformly followed by erysipelas in the part, extending sometimes over the whole face or over a limb, and running its usual course of many days. In the milder form the eruption consists of one or more red patches, sometimes oval or circular, sometimes irregular in their circumference, frequently smooth throughout, at other times with a hard elevated border, or with a rough and papulated surface. These patches appear indiscriminately on the face, trunk or extremities; the oval patches with hard elevated borders being most frequent on the front of the legs. The duration of the redness and swelling is from two or

three days to as many weeks, when both gradually subside, and a slight desquamation of the cuticle follows. The treatment is an aperient, as magnesia and epsom salts, once a day, a mild cooling diet, rest when the patches are on the legs, and a weak lotion of goulard applied frequently to the part, cold in summer, but warm in the winter season, or what is a better criterion, of that degree of temperature which is most agreeable to the feelings of the patient.

Erysipelas in a severer form is marked with more general constitutional disturbance; the sensation of burning heat in the part is more intense, there is considerable tumefaction, and when the face is the part attacked, which is the most usual seat of these severe cases, the eyelids are so swollen as to be entirely closed. The eruption usually appears at the end of the second day of the fever, and in two or three more days, there are numerous small, or a few large, blebs or blisters on the inflamed surface, which burst and desiccate on the second or third day after their appearance. In another variety the surface is perceived to be slightly rough on the first or second day, and, instead of vesicles or blebs, numerous small pustules cover it on the third or fourth day, which discharge a thin acrid matter, forming a yellowish scab or crust, which does not fall off in less than ten days or a fortnight. The treatment in these severer forms of the disease must vary according to the intensity of the consti-

tutional symptoms; and I must apprise you, that when the face or scalp is pretty extensively inflamed, very formidable, alarming, and even dangerous symptoms sometimes arise, as delirium, with a rapid pulse and high fever; and all such cases require, of course, the aid of the most skilful practitioner. The external application most frequently resorted to in these severer cases is a dredging of fine flour, and before vesications or pustules begin to discharge, this is cooling and agreeable, but afterwards it forms a hard crust, which proves a source of fresh irritation, unless it be frequently removed. I am in the habit of bathing the inflamed surface with warm water, by means of a sponge, or with a warm lotion of weak goulard, and after carefully drying the surface, I dust it, where there is little or no discharge, very slightly with hair powder or fine flour through a muslin bag, and repeat this process two or three times a day; but if there is much discharge from either blisters or pustules, after the bathing I apply a thin cool bread and water poultice, containing a little goulard lotion. The general treatment in these severe cases must be regulated by symptoms. Bleeding and brisk purging will be required when the fever is inflammatory, opium and calomel, and bark where low delirium and a small frequent pulse indicate typhus or low fever.

Many medical men consider erysipelas contagious, and sometimes epidemic; but it appears to me

that, under such circumstances, the erysipelas is only a symptom of a contagious or epidemic fever; indeed, I have several times in the course of my practice seen an epidemic fever, in which erysipelas was a frequent, though by no means a constant symptom.

MILIARIA, or miliary fever, is an eruption of very small elevated pimples, over any or every part of the body, occurring during the progress of other diseases, when attended with profuse perspiration; as also in women during their confinement, if from improper diet, superabundance of clothing, or accidental indisposition, they are brought into profuse perspiration. The only treatment required is cool air, moderate clothing, and light diet.

URTICARIA, or nettle-rash, is a slightly elevated eruption, in patches of various forms, white with pinkish or red circumference, resembling the wheals ordinarily produced by the stinging of nettles. It is usually a slight and evanescent disease, disappearing in a few hours, but sometimes it continues for two or three days, and occasionally for as many weeks. It is always more or less connected with a disordered stomach; and is frequently produced by imprudence in eating too much of articles of food that are indigestible; and in some individuals it is very apt to be induced by particular articles of diet, and those of very different quality in different individuals. Some cannot eat fish of any kind without its inducing an attack of the nettle-rash, others

have it only after eating some particular fish, as salmon, mackerel, or skate; and many persons are sure of an attack after eating shell-fish, as lobsters or oysters, and still more commonly after eating mussels. The common edible mushroom, too, has been known to produce the same effect, and certain fungi, much resembling the common mushroom, and therefore often mistaken for it, almost invariably disagree, and usually induce urticaria. In many persons it follows upon eating some particular fruit, as strawberries; I have heard of one individual, who could not eat sweet almonds, and another who could not eat barley-bread, without experiencing more or less of this troublesome eruption. In some individuals this idiosyncrasy is so strong, that the particular article *invariably* produces the effect; but in others only occasionally. In some cases the only inconvenience is the accompanying itching, but in others the patient is dreadfully sick, and has very severe spasmodic pains in the stomach, the whole surface of the body is swollen, but more particularly the face, and the itching is accompanied with intense smarting. In the milder cases of this species of poisoning, a draught or two of tepid water, with a tea-spoonful of magnesia, or carbonate of soda, will be all that is needful; but in severer cases an emetic should invariably be given; and if there is pain in the stomach after the operation of the emetic, a dose of laudanum will be requisite, and with this, or immediately after it, a

full dose of castor oil. In cases of urticaria or nettle-rash from other causes than improper food, or this peculiarity of constitution, the stomach is nevertheless usually disordered, and magnesia or carbonate of soda with a little rhubarb will be the proper remedy, and the dose must be regulated by age and other circumstances; small doses frequently repeated will succeed best, as four or five grains of each three times a day in a little peppermint-water.

HERPES is another of the eruptions which are usually ushered in by a day or two of slight indisposition, and most generally it runs its course within a week or ten days, and is not infectious. It consists of small vesicles in clusters, the vesicles containing at first a clear, and afterwards an opaque fluid, at length desiccating into brownish scabs, and the clusters are surrounded by an inflamed state of the skin. There are several varieties; thus, when the clusters assume a circular or oval form, and the patch is gradually extended by the fresh eruption of more vesicles at the circumference, as those in the centre dry up and disappear, the disease is vulgarly called ringworm; but this is very different, be it remembered, from ringworm of the head, which will be treated of presently. Where the herpetic clusters appear upon the back, loins, or front of the body, and by spreading form a partial circle or band round the body, the disease is called shingles; and in this variety the vesicles are

larger, some being as big as small split-peas. In all its varieties, this eruption is attended with smarting as well as itching, and the pain is aggravated by heat, and by irritating lotions or ointments. As the disease usually terminates spontaneously in a few days, little treatment, either local or general, is required. A weak lotion of goulard, and, to prevent irritation from the clothing, the simplest and mildest ointment may be had recourse to; and when the defined patches called ringworm are protracted, an astringent as common ink, or a solution of green vitriol, which is more cleanly, may be advantageously employed as a lotion. The proportion of green vitriol may be one dram to half a pint of water. The general treatment consists in cool air, a mild diet, and a gentle dose of physic.

The *chronic eruptions*, or those which have no definite period for their duration, have been usually divided into the papular, pustular, vesicular, and scaly; but nature does not restrict herself to such an artificial division, for in many cases we have both pustules and vesicles, or pustules and scales, or still other combinations. And as I do not in this work pretend to systematise, or profess to describe every variety of disease, I shall proceed to treat of those which are of most common occurrence. The RED-GUM, red-gown, or tooth-rash, is an eruption of numerous red papulæ or pimples, occurring in infants, most frequently on the cheeks, but often too on the arms and other parts of the

body. It depends upon irritation from teething, or a disordered state of the stomach and bowels. When it arises from the former, the lancing of the gums becomes necessary, and in all cases absorbents and mild aperients are so, as a few grains of magnesia and rhubarb where the bowels are not relaxed, and a little prepared chalk where they are in that state.

IMPETIGO, or the humid tetters, is arranged amongst pustular eruptions, but it most frequently consists of both small pustules and small vesicles intermixed, the former so called from containing pus or matter, the latter being minute blebs or blisters, containing a thin fluid, like those of herpes. This form of eruption takes place most frequently on the lower extremities, but often on the arms, face, or body: the smarting is intense, and the discharge sometimes considerable, of a thinner or thicker character as the pustules or vesicles most prevail; and the crusts or scabs thus formed are sometimes very extensive. Tetters, like herpes, sometimes appears in circular or oval patches, and sometimes occupies one side of one of the joints of a finger; and at other times extends irregularly over the surface, whether on the face, the body, or the limbs. This disease is more chronic or lasting than herpes, and usually more severe, particularly when there are vesicles like those of herpes intermixed with the pustules proper to tetters. Medicated applications are of

little avail, particularly in the severe cases; all but the most mild and simple aggravating the pain, and not expediting a cure. Cooling the part with goulard lotion after gentle ablution with thin gruel, and then the application of rags besmeared with cream, or sweet oil, or with simple ointment, or white lead ointment, constitute my usual external treatment in the severer cases; but when the inflammatory appearance is less, and the smarting not intense, considerable advantage is derived from the diluted red precipitate ointment, or from sulphur ointment, or from a mixture of the two in equal parts. The internal treatment consists in mild diet, avoidance of fermented liquor, gentle aperients of sulphur and cream of tartar, a tea-spoonful of each once or twice a day; and when the disease is chronic and the parts not very irritable, a short course of Plummer's pill and sarsaparilla, five grains of the former twice a day, with a tea-spoonful of the extract of sarsa in half a pint of water.

The RING-WORM OF THE HEAD, and what is commonly called scald-head, are considered by most writers as only varieties of the same disease, or at least species of the same genus, the former being confined to patches, usually circular and well defined, the latter being more diffuse and extending over the greater part of the scalp, and both varieties, be it remembered, are contagious. It is for the most part a pustular disease, but occasionally

scaly, and sometimes vesicles are also intermixed. The appearances are so well known that I need not describe them, and the success of medical treatment is so precarious, that I doubt I shall be able to say little on that point that is satisfactory. As, however, it is likely that you will meet with very many cases among your poorer neighbours, I am bound to give you the result of my practice.

When consulted for a slight scurfy or scabby eruption on the scalp, which has appeared only a few days, I am content with extreme cleanliness. I see that the hair over the whole surface of the patch or patches is cut as close as possible with a pair of fine scissors, and I order the part to be washed with tepid water night and morning. If it is dry and scurfy, I direct the washing to be done first with soap and water, and afterwards with plain water; if the patch be moist, and the part sore and tender, a piece of sponge should be employed, and the process should be that of fomenting rather than of washing, and it should be continued longer; and lastly, if it be covered by a hard scab, this should be anointed with soft lard after each fomentation. A perseverance in this plan for a week or two will suffice for the removal of many suspicious looking spots, and I believe will even remove some incipient cases of ringworm. If, however, improvement is not apparent in that time, other means must be resorted to, and still sooner if there appears to be any augmentation of the

malady. Now of these other means it must be here observed, that no one of them uniformly succeeds; indeed I may go so far as to say, that every one of them very frequently fails; they must therefore be tried in succession; and I shall enumerate only such of the many scores of vaunted receipts as I have myself seen frequently to succeed. If the scalp is very sore, moist, and scabby, cover the whole of the affected part with a warm poultice, and renew it three times a day, washing and fomenting the part each time with warm water for half an hour. When the scabs are thus in a great measure removed, and the inflammation abated, which will probably be the case in two or three days, order the whole scalp to be shaved, and apply an ointment of equal parts of sulphurointment, tar-ointment, and the diluted ointment of red precipitate. This compound ointment is to be gently rubbed over every part that is diseased night and morning, and the same parts, or the whole scalp, must be thoroughly cleansed with soap-suds, by means of a sponge or a piece of flannel, every morning before the application of the ointment. Persevere in this practice as long as any amendment is perceptible, or till the cure be completed.

If the scalp, instead of being covered with pustules and scabs, is moist with a thin disagreeably faint-smelling ichorous discharge, which agglutinates the hair into a tangled mass, that cannot be

touched without giving pain, after poulticing, bathing, and cutting off as much hair as possible, apply an ointment of *coccus indicus*, in preference to any other, for a week or ten days, which will sometimes effect the cure; but should this not be the case, you must order the compound ointment above spoken of, not neglecting to shave the whole head as soon as the excessive tenderness of the scalp will permit. And here I may observe that shaving, general or partial, according to the extent of the disease, ought to be repeated once in ten days during the progress of the cure.

Should the patches or the whole scalp upon the first presentation of the case be dry and scurfy, or the pustules, if any, be small, and the surface not very sore or irritable, you may at once commence the treatment with the application of the compound ointment to all the parts, or to the whole scalp, previously shaved. The other applications which I can recommend, and which must be employed after the above have ceased to produce improvement, are the tar-ointment alone, the strong red precipitate ointment, a lotion of pyroligneous acid, or of aquafortis, or a solution of lunar caustic. The pyroligneous acid, or the concentrated vinegar of the shops, may be used diluted with an equal quantity of water; the aquafortis with three times the quantity; and of the lunar caustic ten grains should be dissolved in an ounce of water; either of which may be carefully applied to the patches daily,

or every other day, with a camel-hair brush. Another remedy has been lately introduced, of which I have as yet had no experience; it is called kreo-sote, and is a concentrated preparation of tar in the form of a colourless transparent liquid. As an application in ringworm of the head it is made into an ointment, by adding twenty drops to an ounce of simple lard. As the disease is often very tedious, and very difficult of cure, much patience, perseverance, and diligence in the use of these remedies, will be required, and the one must succeed the other, and each be resorted to again and again, whenever you are satisfied that no progress is being made towards a cure. If the general health of the patient be amiss, the appropriate treatment must of course be adopted, for the local disease will seldom improve during a disordered state of the constitution. Indeed it may be considered as usually necessary to give an alterative and a mild aperient occasionally during the cure.

SCABIES or ITCH also is both a pustular and vesicular eruption, sometimes the pustules, at other times the vesicles predominating. This circumstance, together with the varying size of the pustules, often makes it difficult to decide whether a case is one of itch or not. When, however, you see either small vesicles or mattery pustules of every size, from a pin's point to that of a pea, irregularly scattered over the arms and hands, particularly between the fingers, when the patient

complains of considerable itching, or you see proofs of this in the bloody points produced by scratching, you need scarcely hesitate; and if more than one in the same family shows the same appearances, you may confidently pronounce the disease to be the itch. Happily you have in all these cases a certain remedy, a true specific in the sulphur ointment. Considerable care, however, in its use, is required to insure its efficacy. I consider four ounces of the ointment the proper quantity for an adult; my directions are, that a fourth part be sedulously rubbed in each night, for four successive nights, over the arms and legs especially, from above the knees and elbows to the extreme points, and also over any other part of the body where the least eruption of a suspicious character appears. The more the patients submit to confinement to their chambers, or even to their beds, during the four days, the better, so that they may be living in the sulphureous vapour. Not till two days after the completion of the friction do I permit my patients to wash thoroughly, and then a complete warm bath is desirable. At any rate the whole surface of the body should be washed with soap and warm water. After this, clean bed-linen and wearing apparel is of course absolutely necessary, and the greatest care and attention must be enforced to remove whatever has been worn of linen or woollen, of bed or of body clothing, to the wash-tub, or to be scoured with soap and water.

Another inspection of the patient is now required, and, although in a majority of cases the patient, as well as yourself, will feel assured that a perfect cure has been effected by this dressing, some judgment is occasionally required to decide the point. The doubt often arises from the presence of recent scratches, or that of vesicles or pustules recently cured, but not entirely obliterated, and sometimes from a pimply eruption produced by the friction and the ointment; and at other times from the co-existence of some other chronic eruption. An accurate examination by an experienced eye will, however, usually decide the point, and where there is at first a doubt, a delay of a few days will be sure to clear it up. Should there then be proofs of the disease being only partially removed, which may occur in perhaps one case out of forty, a second course of the ointment, with the same care and precautions, will effectually eradicate the disease. I do not mention any other remedy, because in none other can you place the same implicit confidence; and because in your practice, as in my dispensary practice, it may be universally adopted.

We shall now conclude our observations on chronic eruptions with a slight consideration of the *scurfy* or *scaly* diseases of the skin. The slightest is the formation of minute thin scales, never forming crusts, but falling off in the form of very small white bran-like powder upon the least friction.

It sometimes occurs on other parts of the body, but most frequently on the scalp, and is there called dandriffe. It is a slight disease, and calls for no other treatment than frequent ablution with soap and water and slight friction.

The more severe scaly eruptions are LEPRA and PSORIASIS; they are both commonly called scorbutic. The former or lepra, which has no corresponding name in our language, begins as small red elevated spots, and soon shows a slightly scaly surface. The redness gradually disappears as the scaliness increases, and the size of the spots augments. The spots, or patches as they are now become, still maintain distinct circular appearances with reddish elevated edges; they appear most frequently about the elbows and the knees, and the patches are there sufficiently numerous to coalesce. Spots and smaller patches, however, are usually seen over other parts of the body, and about the margin of the scalp, and even amongst the hair. It is attended with itching, but not with smarting; and its duration is uncertain. It seldom wholly disappears without medical treatment, and frequently reappears in the same person at distant intervals, when it has been cured. The number and size of the patches will also vary at different times, whether the patient be under medical treatment or not. The treatment, which I have found most successful, is the internal administration of the solution of arsenic, about five drops for a dose, three times a

day, and the external application of tar-ointment gently rubbed over the patches at night, and washed off with a sponge and soap-suds in the morning. When this does not produce decided improvement, I lay aside the tar-ointment, and use the compound of this with sulphur and red precipitate ointment as recommended for scald-head; and when an alternation of these two unguents, steadily persevered in for several weeks, has failed, or only partially succeeded, I have substituted the strong mercurial ointment for the tar-ointment, but for a few days only at a time, and at different intervals. The use of this latter ointment requires caution; and it must not be rubbed over a large surface, or persevered in long, for it will then assuredly induce sore mouth and salivation. The internal treatment may be varied by sometimes giving a Plummer's pill night and morning, at other times a tea-spoonful of extract of sarsa in a tumbler of water twice a day, and occasionally by a ten days' course of both these remedies.

The other variety of scaly eruption, *Psoriasis*, is called the dry or scaly tetter. In its mildest form it only differs from lepra in being less elevated, more irregular in its circumference, and without the red elevated margin. But in its more usual form it is a severer disease than lepra; the patches are larger, the skin under the scales more inflamed and irritable, and chopped; it is attended with smarting as well as intense itching; and, owing

to the scratching perhaps, which is a consequence of this, the surface is frequently moist with bloody serum, and the whole becomes inflamed, chopped, and very painful. It frequently appears about the face and ears; but no part of the body is exempt from its attacks. It frequently occurs on the arms or legs, and spreads till it occupies almost the whole limb. The treatment in moderately mild cases is the same as for lepra; but, in the severer cases, simple warm fomentations, as with decoction of marsh-mallows or chamomile-flowers, or anodyne fomentations with decoction of poppy-heads, and afterwards warm poultices over the worst portions of the eruption, afford most comfort. Great attention in diet is requisite, it should be mild and moderate—all high-seasoned dishes, and pickles, and fermented liquors should be abstained from. Mild aperients are useful, as sulphur precipitatum, or as it is vulgarly called milk of sulphur, a tea-spoonful in a little milk twice a day, or two tea-spoonfuls of cream of tartar every morning. And when by such means the inflammatory symptoms have been moderated, the same treatment may be adopted, both topical and constitutional, as in lepra. The sulphureous waters, as those of Harrowgate, are very serviceable in all these scaly eruptions, taken internally, as well as used externally. The best substitute for such natural sulphureous waters is obtained by the addition of one tea-spoonful of very finely-powdered liver of sulphur to every four gal-

lons of water, used either for washing or for general bathing. And to imitate the Harrowgate water for drinking, pour a pint of boiling water on a teaspoonful of the same preparation of sulphur, stir it, let it cool, and filter through paper; of this solution put ten drops into a half-pint tumbler of water, and take this quantity two or three times daily for two or three weeks.

LETTER XI.

CERTAIN EPIDEMIC DISEASES NOT TREATED OF AS FEVERS.

MY DEAR SON,

HAVING now treated of fevers, continued and remittent, and also of eruptive fevers, which together constitute the greater proportion of epidemic diseases, we naturally enough proceed to the consideration of other specific constitutional disorders, which prevail occasionally as epidemics. The principal of these are influenza, cholera, and hooping-cough, and with these I shall, as I have done on former occasions, introduce some of their congeners: thus, as allied with influenza, I shall consider catarrh or common cold, and catarrhal fever; and with the epidemic or Indian cholera, I shall treat of our common autumnal cholera, dysentery, and

ordinary diarrhoea, and after hooping-cough I shall make the few observations I have to offer on croup and sore throat.

First, then, of CATARRH, CATARRHAL FEVER, and INFLUENZA. When a person is more or less suddenly seized with sneezing, and at first a dry and stuffed state of the nostrils, and then with a copious discharge of mucus from the same parts, which discharge is at the beginning thin and transparent, and afterwards thick and opaque, that person is labouring under a *catarrh*, or common cold. The disease is a mild or moderate inflammation of the mucus membranes of the nostrils, and is sometimes so mild as to be unattended by any constitutional disturbance, and to be transient in its duration; at other times headache and slight fever, with a sensation of weariness and languor, are its concomitants; and as undue exposure to cold is the exciting cause, other symptoms may arise according to the nature of the exposure, as stiff neck, if that part has been exposed to a stream or draught of cold air, and stiffness with pain of some of the limbs, if they have been exposed to cold and wet. The inflammation of the membrane extends to the throat and chest, in many cases producing hoarseness, sore throat, and cough. If these latter symptoms are mild, we still call it a case of catarrh or cold; but if severe, they constitute diseases known by other names, which will be treated of hereafter. When the ordinary symptoms

of catarrh, as stated above, are unattended by fever, or when the febrile symptoms are very slight, the domestic medical treatment of bathing the feet, taking a basin of tea or gruel at bed-time, and abstinence from wine or beer or other stimulants, is all that is requisite. If the throat be sore, a piece of flannel wrapped round it at bed-time does good; if there be hoarseness as well, I further advise steaming with the vapours of hot water, by holding the head over a basin filled with boiling water, and throwing over the head and chest a light flannel, so as to enclose the basin also, which will be most conveniently supported on the knees. And if this be done at the same time that the feet and legs are immersed in warm water, it will prove an excellent substitute for a hot water or vapour bath, which cannot often be conveniently obtained. As to the possets, the caudles, and wine-wheys, of which every Lady Bountiful and every old nurse has her favourite recipe, I seldom recommend any of them; as, however, to produce a free and general perspiration is the chief object to be desired, I do not object to the adoption of one or other of them, where the patient has from former experience satisfied himself that such an effect will follow, and that too without a previous hot and dry condition of the skin with general febrile excitement. In many individuals nothing so certainly produces copious perspiration, when labouring under a cold and sore throat, with a hot and dry skin, as a large draught of cold

water, and it is under such circumstances both safe and serviceable.

The exciting cause of catarrh being exposure to cold, its frequency will of course be influenced by the state of the weather; and in the spring or beginning of winter it is so very common, and often affects so many in the same family, or the same neighbourhood, as to have induced some medical men to believe it to be contagious. At such seasons it is also more severe, and the inflammation is also more apt to extend to the throat and chest, inducing cough and symptomatic fever. In such cases the boundary between the catarrh and bronchitis, or inflammation of the lining membrane of the air-cells of the lungs, is scarcely definable, and happily such distinction is of no importance, for our practice must in each individual case be regulated by the amount of symptoms; and if a patient has a troublesome teasing cough with quick breathing, sensation of heat and soreness in the chest, a hot dry skin, and quick, hard, though perhaps small pulse, it would be idle to dispute about a name, and to inquire whether the attack began with sneezing and other symptoms of catarrh, or not. The practice must be decisive: bleeding and nauseating doses of tartar emetic will be attended with the same happy results, whether the doctors christen the disease catarrh or bronchitis. In common parlance, however, we call only the milder cases catarrh or cold, and the simple practice I

have above directed, is all that is required in such cases.

If, however, the *cough* accompanying a common cold is troublesome, or remains after the first symptoms of catarrh have vanished, mucilaginous substances and slight anodynes may be safely had recourse to; linseed-tea, gum arabic, Spanish liquorice, fruit or other simple lozenges, are examples of the former: paregoric lozenges, syrup of poppies, or half a tea-spoonful of paregoric elixir three times a day, or one of the cough-pills, of which the formula is to be found in the appendix, are simple and serviceable examples of the latter.

These directions will suffice for the management of a simple cough, such as is often left as the remains of a common cold, in a person otherwise healthy; but you will often be inquired of for something good for a cough in persons very differently circumstanced, as in asthmatic or consumptive patients, or in such as labour under old stomach or liver complaints. In such and various other conditions of the lungs, where a distressing cough is one of the symptoms, and perhaps one of the most urgent, a variety of practice will necessarily be called for, and permanent relief to the cough cannot be expected but from such treatment as is calculated to relieve the complaint, of which the cough is only a symptom; and you are therefore now referred to what is said on this subject in treat-

ing of asthma, consumption, indigestion, &c.; and I have only made these remarks here, that you may not suppose, as many do, that there is, or can be, any universal panacea for cough. I may, moreover, here observe in addition to what I have said above, that, when cough is attended with inflammatory symptoms, anodynes are seldom admissible, and antimonials, with or without bleeding as the urgency of the case may require, will prove serviceable; and on the contrary, when cough is unaccompanied by inflammatory action, anodynes, as opium in its various forms, and henbane, may be prescribed with advantage.

At the same seasons, when common catarrh prevails, catarrhal symptoms very generally attend the cases of ordinary fever, whether of the remittent or continued type; and, as we are in the habit of giving other trivial names to fevers from the prevailing symptoms, I designate these cases *catarrhal fever*, which I have noticed in a former letter. An observant physician will frequently have noticed this and other changes in the character of the prevailing fevers. At one season of the year, his fever patients will almost all have diarrhœa, or perhaps bilious vomiting, or perhaps dysenteric symptoms; and at another season, or, so suddenly is the character of the fever sometimes altered, in another week, a majority of cases will have catarrhal, or even bronchitic symptoms. Now, under each of these circumstances the treatment must vary; and the more

severe or urgent the cough, quick breathing, and soreness or pain of chest, the more promptly and assiduously must we resort to, and persevere in, the treatment proper to catarrh and bronchitis, not losing sight, however, of these two observations, which from their importance I shall here repeat. First, that bleeding in such cases will not be so well borne, as in simple cases of inflammation of the same tissues; and secondly, that if the prevailing fever be remittent, the bleeding, whether general or local, will be most efficacious during the paroxysm of fever; and the appropriate treatment of remittent during the remissions, will not be inapplicable or incompatible with the treatment for bronchitis. It is in the management of such cases, however, that the discriminating judgment of the observant physician is particularly apparent; and I must acknowledge, that I am now travelling out of the road which I had chalked out for my guidance in these familiar letters.

As nearly allied to catarrh, and still more so to catarrhal fever, I shall now treat of INFLUENZA. This is an epidemic disease, which makes its appearance occasionally, but at no stated periods; and it is confined to no particular season of the year, though it occurs more frequently in the winter or spring months. Its appearance is sometimes confined to some large town or no very extensive district, at other times it speedily traverses, though by no regular route, a whole kingdom, and occa-

sionally, as in the winter and spring of 1837, its ravages extend over almost all the kingdoms of the earth. It is supposed to depend upon some peculiar state of atmosphere, because we can conceive no other cause so extensive in its operation; and its progress is too rapid, or rather its appearance in distant countries is so nearly synchronous, that we cannot suppose it to be propagated by contagion alone. The symptoms are usually very similar to those of severe catarrh; viz. sneezing and mucous discharge from the nostrils, slight sore throat and hoarseness, sensation of soreness in the chest, with more or less of cough, and general lassitude, with aching or fugitive pains in various parts of the body. The invasion of the disease is, however, more instantaneous than in an ordinary catarrh, and is wholly independent of exposure to cold. Headache, pains in or over the orbits of the eyes, more decided fever with great and sudden prostration of strength, further characterise the disease, and seem to indicate the sudden application of miasma, or the influence of some physical change in the constitution of the atmosphere, of the nature of which we must at present acknowledge our entire ignorance.

In the further progress of the disease, the cough is attended with expectoration, the mucus from the nose is more tenacious and opaque; and in a majority of cases, the headache is now gone, the pain of chest has much abated, and the languor has left the patient on the second or third day; but, in the

severer cases, either the chest-affections increase with very quick and difficult breathing and suppressed expectoration, or the general febrile symptoms are aggravated with low muttering delirium and utter prostration of strength, and in many such cases a fatal termination takes place within ten days or a fortnight of the commencement of the disease. It has been very generally remarked, that such fatal terminations principally occur in those of previously shattered or debilitated constitutions, particularly where there has existed structural disease in the heart or lungs.

As to the practice in influenza, there exists the greatest possible discrepancy both as to popular remedies and what may be called family treatment, and also amongst medical practitioners. It arises here, as well as in most other cases, from the folly of prescribing for the name of a disease, rather than for the symptoms in each individual case. Some have vehemently extolled, and others as vehemently condemned stimulants, as brandy and water, wine and water, wine-whey, or warm possets; some have universally recommended bleeding, and others have universally decried it. My own observation amounts to this: 1st. That in a majority of cases, the disease left to itself would speedily and spontaneously subside, and leave the patient quite well in a day or two, and therefore, that in such mild cases the treatment recommended for catarrh is all that is requisite, namely, to avoid cold by staying within doors; to

immerse the feet in warm water; where there is soreness of the chest, to inhale the vapour of hot water; and at going to bed to take whatever is most likely to induce perspiration, holding this in mind, that as the ordinary effect of the miasma, or whatever it be that produces influenza, is to depress the vital energies, we may more fearlessly administer wine-whey, or wine and water for this purpose, than in cases of common cold.

2ndly. That in moderately severe cases of influenza considerable distress arises from tightness and quickness of breathing, and a painful dry cough; for which symptoms no remedy is so speedily successful as tartar emetic in quarter-grain doses; the first dose of which will frequently produce vomiting and instantly relieve headache, and induce perspiration; and the continuance of it will speedily promote expectoration, and relieve the breathing; after which, but not sooner, warm wine and water, or warm negus, may be moderately allowed to remove languor.

3rdly. That when the cases of influenza are still more severe, the practice must be altogether regulated by the nature and severity of the symptoms. I have seen cases of bronchial inflammation and of pulmonary congestion, that have imperiously called for venesection, and I have seen the vital powers so low that ammonia, wine, or brandy, judiciously administered, have saved the patients; and I have seen other cases, where both the febrile and chest-symptoms

have been so under the influence of a remittent or intermittent tendency, that quinine steadily persevered in has been the only means of arresting the disease. All these cases of severity must be left to the care of professional men, and instead of detailing the practice I must content myself with the above observations, and a repetition of the important fact, that influenza patients admit of less depletion than the same symptoms occurring in genuine catarrh and bronchitis would imperatively require.

Another wide-spreading epidemic disease, with which we have only very lately become acquainted in these latitudes, is the Indian or Spasmodic CHOLERA. In its rapid and erratic progress through the country it follows the same laws, if laws they can be called, as influenza does. In the suddenness of its attack, and in the immediate prostration of the patient's strength, it also greatly resembles it. It is therefore probable that each disease takes its origin from a peculiar miasma, or from some unascertained atmospherical peculiarity; and as the miasma of influenza determines to, or more remarkably affects the mucous membrane of the air passages, so the miasma of Asiatic cholera peculiarly affects the mucous membrane of the alimentary canal.

We have stated above, that influenza very much resembles catarrh or common cold: now Asiatic cholera seems to me to bear the same relation to ordinary cholera that influenza bears to catarrh;

I shall therefore treat of common cholera before proceeding to the consideration of this formidable epidemic, and shall also dismiss with a few brief observations the diseases called diarrhœa and dysentery as its congeners.

The symptoms of *ordinary Cholera*, which is a very common disease in the autumnal season, and particularly in our fenny districts, are those of mild fever, as lassitude, headache, quick pulse, and heat of skin, speedily followed by, or instantly accompanied with, vomiting, purging, and spasmodic pains of the legs and thighs, as well as in the stomach and bowels. The matter vomited is usually bilious, but at other times is without any tinge of bile, and in some cases the nausea and retching is most urgent and incessant without any vomiting, except now and then of a little colourless mucus. So the purging too generally brings away vitiated bile of a dark green, or tarry brown, or of a pitchy black colour; in many cases, however, the evacuations are from the very first without any tincture of bile, consisting of unusually pale fæculent matter, or a pale turbid watery mucus. Thus the symptoms of cholera so nearly resemble those given above as the symptoms of bilious remittent, that I find a difficulty in marking the distinction. I may observe, however, that there is less fever in cholera, and it is little disposed to assume a remittent character, though an attentive observer will usually discover the ordinary symptoms of a mild paroxysm

of fever ushering in the choleric symptoms, or occasionally preceding them for twelve or twenty-four hours; and in our fenny district I have frequently known the fever to be protracted after the choleric symptoms have been subdued, and have now and then observed it to assume a remittent character. Again, the discharge from the bowels is, perhaps, more frequently without bile in cholera than in bilious fever, and the spasms are decidedly more frequent. As the symptoms of cholera do, however, very much resemble those of bilious remittent, so of course must the treatment be alike in the same degree. The directions are very simple, and will be found a counterpart of those previously laid down for the choleric symptoms of bilious remittent, consisting indeed in the frequent repetition of very small doses of calomel, with or without opium, as the case is, or is not, attended with spasmodic pains. I usually begin with calomel alone in very mild or moderately mild cases, repeating half-grain doses every ten minutes, till ten or twelve grains have been given; but in cases attended with spasm I combine a quarter of a grain of opium with each dose of calomel; and I also do the same if calomel alone does not greatly abate the symptoms after the first hour or hour and a half. If the spasms are pretty general, and very severe, I begin with a tea-spoonful of laudanum alone, or in a very little warm water, desiring the patient to hold it in his mouth some time,

and to allow it to go slowly into the stomach, mixed with the saliva. In genuine cholera the symptoms soon subside under this treatment, and under the almost entire abstinence from drinking as well as eating which I universally prescribe; for I only allow my patient to rinse the mouth with toast and water when thirsty, and to swallow a tea-spoonful of brandy with a table-spoonful of gruel about once in two hours, till the retching has subsided, and afterwards the gruel without the brandy, or the same quantity of broth, at the same intervals. After two or three days an aperient is often required, and it may be a dose of rhubarb and magnesia, or a dose of castor oil.

Should fever continue after the symptoms of cholera have subsided, and more particularly if the febrile symptoms recur at stated intervals, the case becomes identical with bilious remittent fever, which I have treated of before. And here I must apprise you that cases of simple cholera, such as I have been describing, and cases of bilious remittent fever, frequently prevail at the same time, and often occur in the same family either at the same time or in quick succession.

Simple Diarrhœa, which consists in frequent alvine discharges of the natural contents of the bowels, often takes place without fever; and when protracted for more than a day or two, will require the same treatment as directed above for diarrhœa as a symptom of fever. If, however, any case proves

unusually obstinate, and resists the treatment there laid down, I recommend the trial of a pill to be repeated every night, or night and morning, according to the violence of the purging, consisting of one grain of opium and two of sulphat of copper, which is the blue copperas. The diet must be attended to of course; vegetables are to be abstained from, and fluids taken in small quantity; and arrow root, or, what is better, starch made palatable with sugar and a little wine or brandy, may be taken at bed-time.

Dysentery is a purging of bloody mucus attended with griping pains, and usually with pain and tenderness on firm pressure over some part of the belly. The alvine dejections are very frequent and urgent, and attended with much painful straining. This disease, when accompanying fever either of the typhoid or remittent character, as in the description given of it by our military and naval surgeons, ought rather to be considered a variety of such fever, and may be called dysenteric fever, for the treatment of which I refer you to my letter on fevers. When it occurs as a chronic disease independent of idiopathic fever, or remains as a sequela of fever, a perseverance in the same remedies, namely, calomel and Dover's powder, or the grey powder instead of the calomel, with plain unseasoned diet and warm flannel clothing, is all I have to suggest.

In *Asiatic Cholera*, as it prevailed in many

parts of this country in 1832, the symptoms were altogether more urgent, and much more frequently fatal, than English cholera was ever known to be. Its presence seemed altogether independent of season; it followed no regular laws in its progress through the country. Its first seizure was marked by the greatest possible prostration of strength, and indeed many died in a very few hours from the first baneful influence of the miasma upon the nervous and sanguiferous system. There were, however, very many cases of somewhat less severity than this, in most of which the symptoms were incessant vomiting or purging, or both, with the most painful spasms or cramps in the legs, arms, or trunk, from which symptoms the disease obtained the name of cholera; but in other cases the febrile symptoms, which were mostly of the typhoid, or of the nervous character, were most predominant. Many other cases too occurred at the same time when the cholera most prevailed, and in the same localities, of simple continued fever, without any cholera symptoms, which might be called either typhus or nervous fever, but which was, in all probability, produced by the same peculiar miasma, or by the same unappreciable atmospheric peculiarity operating differently upon different constitutions.

The treatment of Asiatic cholera must vary with the symptoms. In the severest cases, when the action of the heart is scarcely to be felt, and the surface of the body has become cold and of a livid hue,

whether vomiting and purging are urgent or not, excitants and stimulants must instantly be resorted to; warmth, by the hot-air bath, by wrapping the body in blankets wrung out of hot water, by hot bottles, hot bricks, or hot bags, whichever can be most speedily procured, and at the same time general friction and mustard-plasters over the region of the heart and stomach, are amongst the external means. If there is no vomiting, or the retching seems ineffectual, the administration of a powerful emetic will sometimes relieve the heart from its load, and speedily improve the pulse, and restore the heat. Where the vomiting and purging are inordinate, and the fluids evacuated have that peculiar appearance, which has been compared to thin gruel or rice-water, so generally observed in this disorder, calomel appears to me to be the most important medicine, and the dose should be two grains every quarter of an hour, or at longer intervals according to the urgency of the symptoms, with or without opium according to the violence of the spasms. Brandy, sal-volatile, or other stimulants, must also be had recourse to in proportion to the degree of faintness and exhaustion; but you must be cautioned against perseverance in opium and stimulants after the reaction is once established, that is, after the heart is relieved, the pulse raised, and general warmth of the body restored.

After this short and hasty sketch of diseases af-

fecting the mucous membranes, we cannot help observing a similarity in their whole history as well as in their symptoms, between those affecting the mucous membranes of the air-passages, and those affecting the mucous membranes of the alimentary canal, making due allowance for the disturbance of the different functions performed in the two different parts of the mucous tissue ; and our attention cannot but be drawn to the exact parallelism between catarrh, catarrhal fever, and influenza on the one hand, and English cholera, bilious fever, and the Asiatic cholera on the other. Catarrh, like simple cholera, is produced by ordinary vicissitudes in the weather, and generally by an imprudent exposure to its effects, and both diseases are accompanied with very slight fever or none at all. Catarrhal fever and bilious, or, as it might with propriety be called, cholera fever, are idiopathic fevers accompanied by determination to the mucous membranes ; to that of the air-passages in the former, as to that of the alimentary canal in the latter. Influenza again, like Asiatic cholera, depends upon miasma or some unknown atmospheric peculiarity, and traverses kingdoms with rapidity and by no appreciable laws ; they both affect the nervous and sanguiferous system very similarly, sometimes producing only fever of the typhoid or low nervous character, but most frequently accompanied by determination to the mucous membranes ; the former,

that is influenza, to those of the air-passages, and the latter, that is cholera, to those of the alimentary canal.

There is another disease of the air-passages, which comes naturally to be considered in this place, which is HOOPING-COUGH. This is generally acknowledged to be contagious, that is, communicable from one person to another independently of atmospherical influence; and yet, like most other contagious diseases, it is more prevalent and becomes epidemic in some seasons at uncertain periods, and in this respect may be said to be influenced either by miasma, or by some unknown atmospheric peculiarity. Hooping-cough, as it occurs only once in the same individual, is most commonly a disease of childhood. It usually commences with general febrile symptoms, as headache, listlessness, and heat of skin, but is very early accompanied with cough, which is at first of an ordinary character, and the case resembles one of catarrhal fever. In many cases, however, the febrile symptoms are so mild as not to be noticed, and a slight cough is all that is observed for many days. After a little time, however, the cough assumes its peculiar character, and the whoop, occasioned by a long protracted inspiration, satisfies any one who has once heard it that the disease is hooping-cough, or as it is sometimes called kin-cough. In mild cases the paroxysms or fits of coughing occur only once or twice a day, a little phlegm is expectorated each

time, the fever is slight or none at all, and after one or two weeks the disease is gone without any, or with very little disturbance to the constitution. In severer cases the cough is frequent and each paroxysm most distressing, the little sufferer clinging to something for support, the breathing being interrupted almost to suffocation, and the countenance becoming turgid and approaching to lividity, until the expectoration of some viscid phlegm, and usually the disgorgement of the contents of the stomach by vomiting, relieves the breathing, restores the circulation, and removes all present apprehension of danger. The recurrence of such violent paroxysms may be only two or three times a day, or as many times every hour; and the attendant fever may be of every degree of severity indicative of more or less inflammation in the lungs, from which, you ought to be apprised, the principal danger in hooping-cough arises, rather than from the violence of the fits of coughing. In some seasons there is much more tendency to this inflammation than in others, and then the fatality of the disease is greatest. After the chief severity of the attack is over, the disease becomes chronic, and the peculiar spasmodic cough may occasionally be heard for many weeks or even months. And there is also a remarkable tendency in subsequent coughs arising from common colds, to assume the hooping character for months, and sometimes years, afterwards.

The treatment of this disorder, like every other, varies of course according to its severity. The utility of emetics, not only at the commencement, but during the progress of the disease, is so generally acknowledged, that it may be laid down as a rule to give an antimonial or ipecacuanha emetic as soon as the disease is recognised. I am myself in the habit of giving a combination of the two, say one grain of tartar-emetic and ten of ipecacuanha to a youth of ten or twelve years old, and half that dose to a child of five, and so in proportion. In mild cases nothing more is required than to avoid full meals, attend to the state of the bowels, and to repeat the emetic once or twice at intervals of five or six days.

In *somewhat severer* cases, where the cough is frequent and distressing, but none of the febrile and inflammatory symptoms about to be detailed are present, (of which fact you may be assured, if the child is brisk and lively, and expresses himself as being well in the intervals between the fits of coughing,) besides giving the emetic at intervals of four or five days, anti-spasmodics and external stimulants are to be resorted to. A tea-spoonful of a mixture of paregoric elixir, Hoffman's anodyne, and oxymel of squills in equal proportions, may be given to an adult, and half the quantity to a child ten years old, every six hours in a little water; a blister should be immediately applied on the chest, and after this is well, Roche's embrocation, or a

liniment made by adding one part of tincture of cantharides to five of opodeldock, is to be well rubbed over the chest once in twenty-four hours.

In detailing the treatment of the *severest* cases of hooping-cough I need only advert to general principles, as the judgment of the medical practitioner, who ought in all such cases to be called in, must adopt the appropriate remedies, in which he will be regulated by the nature and severity of the symptoms in each individual case. The danger usually arises from bronchial inflammation, and the treatment consequently consists in bleeding both general and local, and in the free administration of tartar-emetic. The symptoms of such inflammation are, very quick and painful breathing, with quick and small pulse, and a hot skin. There is also a short suppressed cough constantly harassing the little patient, independent of the paroxysms or fits of coughing, having the peculiarities of hooping-cough. For more precise directions I refer you back to what has been said of the treatment of catarrhal fever, requesting you to hold in mind, first, that the spasmodic character of the cough will authorise a somewhat earlier and freer use of anodynes and anti-spasmodics in conjunction with tartar-emetic; and secondly, that in some epidemics the fever of hooping-cough has more of a typhoid character than in others, which greatly aggravates the danger, and will make the cautious practitioner have recourse to bleeding with somewhat less freedom.

Hooping-cough, in its chronic form, does not require confinement to the house, even in cold weather ; but as a fit of coughing is sometimes the consequence of an overloaded stomach, or an over-excited state of the circulation and respiration from violent exercise, such exciting causes are consequently to be avoided. And I may conclude with the recommendation of a change of air, wherever it can be effected, as highly conducive to freeing the constitution from this chronic form of the disease.

There is another disease of the respiratory organs, which also has by some been considered epidemic ; and which, as it derives its name from the peculiar sound in breathing, comes naturally enough to be considered after hooping-cough ; and this is CROUP. It is a disease of infancy and childhood, very seldom if ever occurring after the age of puberty. At its commencement it is an inflammation and thickening of the edges of the rima glottidis, or the chink at the top of the windpipe, by which the sound of the voice is regulated ; and hence in this disease the cough has a remarkably hoarse ringing sound, as if made through a trumpet, and is followed by a sonorous inspiration something like that of hooping-cough, but shriller ; and the child's crying or speaking betrays hoarseness in the intervals of the cough. As the disease advances, inflammation runs along the mucous lining of the windpipe, and through its ramifications in the lungs, and in some cases a muco-

purulent exudation from this membrane, becoming tenacious in the upper part of the passages, forms a membranous tube there, which still further impedes the breathing, and is sometimes expectorated either in shreds or in larger portions, which forms one of the characteristics of croup in its advanced stage. The parts implicated in this disease are so delicately formed, and are so essential in breathing, that if the appropriate treatment be not instantly and vigorously adopted in a genuine and severe case of it, a fatal termination will generally occur on the second, third, or fourth day.

Croup, like other diseases arising from cold, occurs most frequently in winter and spring. It is most common on the east coast, and during the prevalence of the east winds, and, from its frequency in such situations, is treated of by some authors as an endemic; and, from its frequency at some seasons, it has been considered by others as an epidemic.

Similar croupy symptoms, it is evident, must arise where inflammation extends from other parts to the chink of the windpipe, and therefore they occasionally accompany scarlet fever, as I have before observed, and malignant sore-throat, if such a disease ever occurs without scarlet fever; and this circumstance it is, perhaps, that has induced some physicians to call croup a contagious disease. By a similar extension of inflammation croup may be blended with bronchitis, or bronchitic

fever ; that is, croup may terminate in bronchitis, or *vice versâ*, bronchitis in croup. These considerations will settle many discrepancies in the history of the disease, as given by various authors, and will simplify our views of such cases as we may meet with.

I must further observe, that the children in particular families are remarkably prone to this disease, which arises probably from similar natural conformation of the parts, as family peculiarities of voice, in all probability, arise from the same circumstance ; and it must be held in remembrance too, that the same child is very disposed to have a frequent recurrence of the disease ; from which two circumstances it arises, that many children, and all the children of some families, never take the least cold without having the croupy cough, and the croupy breathing. This it is important to know, because the same danger does not exist in these cases, and the mere croupy sound of the cough need not excite the same alarm, though they still require some care, and much watching. And these milder cases, where a croupy cough is very distinctly marked, and yet ceases spontaneously in a very few hours, or after a day or two, are in all probability what have given rise to the opinion, that there are two kinds of croup, the one inflammatory, the other spasmodic.

The symptoms of croup come on so suddenly and unexpectedly, that a child, which has been

put to bed at its usual time, without any apprehension of indisposition, has given alarm to its mother or attendant some time before midnight by a single hoarse loud cough, without, perhaps, awaking from its sleep. This is soon followed by another and another, the child looks a little flushed, and feels a little hot, and, if it awakes, it shows peevishness, and its cry is hoarse, and its breathing a little hurried. If the child's attendant is a stranger to croup, no alarm is taken, and the child sleeps through the night with little or no more cough, is scarcely perceived to be at all ill through the succeeding day, or only shows the symptoms of an ordinary cold; but alarm will assuredly, in many of these cases, be excited before the next approaching midnight by a fearful aggravation of the symptoms; the cough, with its peculiar clangor, becomes more frequent, the deep crowing inspiration is well marked, the voice, whether in crying or speaking, is hoarse, the pulse quick, and the skin hot. The disease is now fully set in, and the danger, without the immediate adoption of remedial measures, is imminent.

In detailing the treatment we will go back to the very earliest symptoms, and suppose the anxious mother, taught, perhaps, by former sad experience to be alive to danger, not only upon the first croupy sound, but upon observing in the course of the afternoon the ordinary symptoms of cold, attended with hoarseness, which is not a common

occurrence in young children, except where there is a croupy disposition. The treatment consequent upon this early alarm need only be to let the child's supper be very scanty, to put it into a warm bath, and to steam the mouth and throat by holding its face over a basin of hot water, and to preserve an equable and agreeable temperature in the room through the night. The chief advantage, however, from this early attention to the case, will be the careful watching for the approach of other symptoms, and the preparation to meet them promptly. As soon as croupy cough is heard, if it is the child's first attack, an antimonial emetic should be given, as one grain of emetic tartar to a child of four or five years; and the little patient should be sufficiently guarded by clothing, from taking a chill during its operation. If, after the emetic is worked off, the child falls asleep, and is not again disturbed by the cough, or but slightly so, I recommend nothing more than a dose of calomel and rhubarb in the morning, two grains of the former and eight of the latter to children from four to six or seven years of age, a few drops of antimonial wine every four hours, a scanty diet through the day, and a restriction to the house, be the child apparently ever so well. This early attention will, I am satisfied, in many cases arrest the attack and prevent mischief, particularly in families where there is a strong predisposition to the disease.

When, however, the individual has previously

had an attack, the emetic may be dispensed with on the first night, as the case will, in all probability, only prove one of common cold; still, however, the patient should be kept within doors through the day, and the further progress of the case be anxiously watched, that the emetic may be given the succeeding evening, if the symptoms be at all aggravated; and in these cases, as well as in all primary attacks, should the croupy cough occur again, and the fever continue after the emetic, the application of leeches to the throat, in the hollow just above the breast-bone, should not be delayed, and the number must vary from two to six, according to age and robustness, two to an infant, and six to a stout child four or five years old; and above this age four or five ounces of blood may be taken from the arm, even at this early period of the disease; the antimonial must be given regularly, and the calomel and rhubarb be repeated. These means early had recourse to, and strenuously persevered in, will, in a majority of cases, prove speedily successful. When, however, the inflammation runs on to the formation of the croupy membrane, and the difficulty of breathing consequently increases almost to suffocation, the only chance is in very full and repeated doses of emetic tartar, as a quarter of a grain, to a child three or four years old, every quarter of an hour, till it produces vomiting, to be resumed in the same way two hours after the last vomiting, and thus persevered in for

two or three days, if the difficulty of breathing is so long continued.

There is another disease of infancy, which has sometimes been confounded with croup, but the noise is more like a momentary crowing, with a temporary suspension of breathing and consequent struggling; it is not often accompanied with cough, neither is there any hoarseness, or other signs of either cold or fever. This is known to many nurses under the name of CHILD-CROWING; the fits occur at uncertain intervals, and are usually attended with a contraction of the thumb into the palm of the hand, or a similar contraction of the toes; which may arise either from spasmodic contraction of one set of muscles, or from a paralytic relaxation of the opposite ones; and this doubling in of the thumbs, with slight convulsive motions about the mouth, occasionally occurs in the intervals between the fits of crowing. Whether the seat of this disease be the brain, or the nerves which supply the upper part of the windpipe, it must always be looked upon with alarm and apprehension, for, in one of these momentary catches of the breath, the child is often seized with general convulsions, and expires.

The late Dr. John Clarke, believing the disease to arise, like ordinary convulsions, from a fulness of blood in the head, recommended bleeding and purging, with as much freedom as the little patient could bear; but the more modern view of the cause and seat of the disease, namely, that the

muscles which open the chink of the windpipe are in a state of partial paralysis, leads to a different practice, and one which harmonises better with the practice of other old authors. In the fit, which is a struggling for breath, the child must be shaken and even beaten with apparent roughness, so as to induce crying if possible, which relieves the breathing; cold water may be dashed into its face to induce sighing or sobbing; and the back of the mouth, which is usually open, may be tickled with a feather to excite vomiting. What further is to be done, if the struggling continues, or if it returns, which it sometimes does repeatedly, is to apply a hot flannel to the stomach, till the warm bath, the necessity for which should in such cases be anticipated, is prepared, and the child immersed in it up to the chin. The warmth should be about 96° , and the child be kept in a quarter of an hour. The treatment of such a case in the intervals must be guided by circumstances. If the face is flushed and the child is robust, two, three, or four leeches may be applied to the temples; if there be enlarged glands about the throat, leech them; and if there be symptoms of catarrhal fever, which is sometimes the exciting cause of child-crowing, apply leeches to the chest, or if the child is about teething, lance the gums freely. Should neither of these circumstances be apparent, give the child a tea-spoonful of a solution of assafoetida two or three times a day, with a powder of two grains of rhubarb, and three

of carbonate of soda, till the crowing-fits have ceased for several successive days; and afterwards give the above powder twice a day in infusion of cascarilla for two or three weeks.

I shall conclude this letter with the consideration of those inflammations of the fauces or back part of the mouth, known under the common denomination of SORE THROAT. Exposure to cold is the general exciting cause, and getting wet in the feet, be it remembered, produces sore throat quite as frequently as exposure to a cold north-east wind.

In what I shall call a *husky sore throat*, the redness about the internal fauces is dull, and approaches to a claretty colour rather than a bright scarlet; there is little or no swelling except of the uvula, which is of the same dull red colour, and somewhat swollen as well as relaxed or lengthened; all the parts feel dry, but very little if at all painful, and there is no difficulty in swallowing. There is usually a disposition to what is commonly called a tickling cough, at first without expectoration, but afterwards with a little simple mucus or phlegm. A person having such a sore throat feels much less of it whilst in the open air, though the weather be cold and frosty, but is sure to have an aggravation of it upon returning to a warm room. He not only feels no inconvenience during his meals, but rather finds the mastication and deglutition, when eating and drinking, to afford relief; he will, however, never fail to experience increased

dryness, and more of the tickling cough, after he has finished his meal, and that in proportion to the quantity of stimulus he has indulged in. This sore throat, not being of sufficient importance to induce the patient to take much care of himself, is generally protracted many days, the inconvenience being always aggravated in the evening; and as the patient is during its continuance very susceptible of cold, it is by no means an uncommon event, that in the course of its progress he is attacked with other symptoms of severe and general cold, or catarrh, as sneezing, coughing, stiff neck, pains in the face, or ear-ache, with head-ache and feverish symptoms.

The method of treating a husky sore throat is to keep within doors, put the feet in warm water, and steam the throat at bed-time, to suck simple mucilaginous and sub-acid substances, as gum arabic, jujubes, damson cheese, or fruit lozenges, to abstain from wine, beer, and other stimulants, and to wrap a piece of flannel round the throat at night.

The inflammation of the throat just described is now and then accompanied with whitish grey spots, studded over the back of the fauces and inside the cheeks, which soon, from the removal of the film, become so many little superficial ulcers. This constitutes what may be called the *aphthous sore throat*, because the spots just described are termed aphthæ. It occurs most commonly in debi-

litated and broken constitutions. The best application to these little ulcers is the lunar caustic, either by touching them with the fine point of a piece of caustic itself, or by drawing over their surfaces a camel hair pencil wetted with a strong solution of it, as of two grains in one dram of distilled or rain water. This should be repeated once a day, and a gargle of muriatic acid, or of cayenne pepper, should be used every four or five hours; a dram of muriatic acid to a pint of water will be strong enough, and four grains of finely powdered cayenne pepper will be the proper quantity to be rubbed down in a pint of water. The treatment in other respects is to be the same as in the husky sore throat.

A similar inflammation and ulceration occurs still more frequently in feeble children, particularly in connexion with disordered bowels, and is universally known by the name of *thrush*. Here the aphthæ appear indiscriminately over the tongue, the inside of the lips, and the cheeks, as well as over the fauces; the best application is either a piece of borax moistened and drawn over them, or a strong solution of it in honey or simple syrup, that is, as much as it can be made to dissolve, applied by means of a camel hair brush or soft feather. But here also, when the ulcers are deep, nothing disposes them so soon to heal as the lunar caustic.

The next species of sore throat which I shall describe, is the active inflammation and swelling of

that part of the back of the mouth, on each side called the tonsils. It is termed quinsy by some, but that term is more commonly restricted to the most severe cases, where the inflammation runs on to suppuration or the formation of matter. This, which we shall call the *inflammatory sore throat*, is, like the former, induced by cold, is ushered in with more general constitutional disturbance, is distinguished by a bright red colour of the tonsils, with considerable swelling, great difficulty of swallowing, and some impediment in the breathing. The swelling being almost entirely confined to the parts called the tonsils, which lie on each side of the open throat, as far back as the uvula, is easily felt externally at the angles of the lower jaw, where pressure gives considerable pain.

A liniment of sweet oil and hartshorn, or the liniment of ammonia, should be rubbed on the external swelling night and morning, warm water used as a gargle or internal fomentation, and three of the cathartic pills with a dose of salts be ordered to be taken immediately. If the inflammation and swelling do not begin to abate in a day or two, leeches should be applied over the external swellings, followed by a repetition of warm poultices, and the purgative should be repeated. If this does not afford speedy relief, a surgeon having been called in will proceed to scarify the tonsils with a lancet, and the bleeding should be encouraged by perseverance in the warm water gargling. Not-

withstanding the use of all these means, the inflammation in a few cases will run on to suppuration or formation of matter, which constitutes the true quinsy; for the relief of which the surgeon is advised to open the abscess with a lancet, as soon as he can satisfy himself that the tumor points, or is soft with the contained pus. A variety of gargles will be recommended by the nurses, but, in this inflammatory sore throat, the warm water is both most agreeable and most serviceable; if, notwithstanding its free use, the mouth and throat be still dry, I have found in this as well as other sore throats, where the same dryness exists, a powder of equal parts of sugar and saltpetre put on the tongue every two hours, half a tea-spoonful at a time, promote the secretion of saliva, and being swallowed slowly in part, and partly used as a gargle and spat out, prove useful by lubricating the parts, and perhaps also by diminishing inflammation. Blisters over the swollen parts are generally ordered in severe cases, but I doubt whether they do not produce as much harm as good by increasing the heat, stiffness, and the pain both in swallowing and breathing. They also prevent the repetition of leeching and fomentations, which I deem of more importance.

Another species of sore throat is the *ulcerated throat*, to which some persons are particularly prone. The immediate exciting cause of this species also is cold, but I think I have observed it

to occur most frequently in persons who are troubled with indigestion, or other stomach affections. It commences, like the last, with uneasiness on one or both sides of the back of the throat, with a sense of fulness, and some difficulty in swallowing, and with occasional pricking pains. It is often ushered in with, or preceded by, intense head-ache and slight fever. On inspecting the throat, it is discovered to be red over the whole of the back part, and swollen in one or both tonsils, and on the second, third, or fourth day, one or more ulcers are discoverable on the swollen tonsils, usually superficial, but sometimes deeper; at first the ulcer has a white film on its surface, but it presently assumes in a majority of cases a clean and healthy appearance. The duration varies from three or four to ten or twelve days; and in this respect, as well as in the extent and depth of ulceration, the case is much regulated by the usual healthiness or unhealthiness of the patient. This species of sore throat bears the same relation to the last or inflammatory sore throat, that the aphthous bears to the husky sore throat.

The best general treatment is to begin with an emetic, then to give one or two of the alterative pills at bed-time, and a seidlitz draught the following morning, which pills and draught may be repeated after two days, if the patient be not by that time very nearly well. The local treatment, where there is much swelling, must be leeches under the

angles of the jaw, warm fomentations, and warm water gargling for the first day or two, and then gargling with vinegar in sage tea, or with muriatic acid and cold water, a dram to a pint. If the ulcers do not very soon assume a healthy and healing appearance, they should be touched with lunar caustic once in two days. In mild cases the leeches may be dispensed with, and the acid gargle may be used from the commencement.

It may perhaps elucidate the classification of sore throats here adopted, and aid the reader in comprehending the distinctions, if I observe that the husky sore throat is analogous to that which occurs in measles and small-pox ; the second, or aphthous, to that which occurs in the *severer* forms of scarlet fever, and the fourth, to that which accompanies *milder* cases of scarlet fever in healthy and robust subjects. The last, indeed, is a very usual occurrence during the prevalence of scarlet fever in nurses or others, who having formerly had the scarlet fever are now exposed to the infection. In some particular persons, too, this species of sore throat occurs on all occasions when, by exposure or otherwise, they experience sore throat at all.

LETTER XII.

ON VISCERAL OR INTERNAL INFLAMMATIONS.

MY DEAR SON,

THE principal acute diseases, which remain to be treated of, are the inflammations of the various internal organs termed viscera, and their investing membranes; and these will constitute the subject of the present letter. These viscera are contained in the three great cavities, the head, the chest, and abdomen or body, which will therefore form, naturally enough, a three-fold division of the subject. The investing membranes are also the lining membranes of the cavities, the one being a duplicature of the other; they are called serous, from the nature of the fluid secreted on their surface, in contradistinction to the mucous membranes, the diseases of which we have already considered. The latter, or mucous membranes, be it remembered, line the air passages and the alimentary canal, and have communication by natural outlets with the external air. The serous membranes on the contrary line the cavities, and cover the contained viscera, and have no outlet or communication with the external air. Upon this difference in their circumstances, depend many distinctive characters in their diseases; as for instance, the admission or contact of the air in its ordinary state, being natural to the mucous

membranes, produces no evil, but if admitted in consequence of a wound into contact with a serous membrane, it is apt to produce inflammation; and again, the admission of noxious air or other noxious matter by the natural inlets, is a most fruitful source of the diseases of mucous membranes, from which the serous are necessarily altogether exempt. I may also further observe, that when the secretion of the mucous membrane is preternaturally increased, or morbid in its quality, it has a natural outlet, and disease is thus frequently removed: whereas such increase in the secretion of a serous membrane by its accumulation constitutes dropsy, and its morbid quality is the source of other diseased conditions.

Proceed we now to the consideration of INFLAMMATION OF THE BRAIN and its membranes, which is called, by anatomists, the viscous or internal organ of the head or skull. As the functions of the brain are pre-eminently important, so are its diseases formidable, and often fatal; and none more so than inflammation, whether of the brain itself, or of its membranes, whether it be partial or general, acute or chronic. Every function both of mind and body is mediately or immediately dependent on the brain, and is consequently liable to derangement, or destruction, from any deviation in the natural condition of that all-important organ. Pathologists have of late made considerable advances in ascertaining the morbid symptoms, mental and corporeal, that are indicative of particular morbid lesions; and also of their situation, whether in the investing

membranes, or the substance of the brain, whether at the base or in either hemisphere, in the cerebrum or cerebellum. Such knowledge is important to the physician, but its details would be altogether out of place in such a work as this. Indeed, so formidable a disease as inflammation of the brain can never with propriety become an object of practice to you, or such as you; and in what I am about to say, my only object is to put you on your guard, that when you see such an assemblage of symptoms, you may be fully aware of the danger, and urge immediate resort to the best medical aid that can be procured.

Inflammation of the membranes lining the skull and covering the brain, seldom occurs without extending more or less to the brain itself, and therefore I shall give but a single description of symptoms indicative of acute inflammation within the skull. Intense pain over a great portion of the head, high excitement of the faculties, a flushed countenance, protruding eyes, suffused with redness and with contracted pupils, intolerance of light, and various kinds of noises in the ear, strong arterial pulsations in the neck, the temples, and within the head, sleeplessness, delirium, and convulsions, are the early symptoms; and then come the opposite of these, torpor, dulness of the senses, dilated pupils, prostration of muscular strength, paralysis, or apoplectic coma. Sometimes the former set of symptoms recurs, and is again succeeded by the latter, before the scene is closed by death. These

various symptoms will be differently grouped, of different intensity and duration, as the inflammation attacks this or that portion of the brain, and as it is more or less extensive. When you see several of the above symptoms attacking a person previously in good health, and of a plethoric or full habit, particularly if they occur after the free use of ardent spirits, after undue exposure to cold, or after excessive exertion of the mental faculties in abstruse studies, send immediately for medical aid, and as an hour's delay may be dangerous, bleed him freely at the arm, and apply cold to the head, and give an active cathartic.

Should some of the above symptoms come on more gradually, and the pain of head be described as more confined to a spot, and particularly if the patient has of late experienced a fall or a blow upon the head, let your apprehensions be alive to inflammation of the brain of a more local character, and delay not to place the patient under professional care.

There is an inflammation of a deep-seated portion of the brain, to which children are more particularly liable, to which I would next draw your attention. You have often heard of HYDROCEPHALUS, or water of the head. This is a misnomer, in as far as the deposition of water is the consequence of previous inflammation, and indeed does not always take place, if the early stage of the disease is met by prompt and proper treatment. The

inflammatory attack in this disease is in a serous membrane lining certain small deep-seated cavities in the brain called ventricles. The subjects of the disease are almost always young children under twelve years of age, and most commonly under four or five. It sometimes occurs in the progress of simple fever, but is also very often an idiopathic disease; in which latter case the early symptoms are unusual pettishness, and fretfulness in the day, and restlessness at night, with complaining of head-ache, if the child be old enough to express its feelings. It shuns the light, startles at noises, and, if very young, never seems easy but while the nurse is carrying it about in her arms. Its countenance is sometimes flushed, at other times unnaturally pale, and the pulse is usually quick, though I have lately witnessed a case in a young gentleman ten years old, where the pulse was preternaturally slow during the first ten days of the complaint, never rising during that period above fifty beats in the minute. The appetite is precarious, and the bowels costive. After this state of matters has lasted from three or four to six or eight days, the child becomes more drowsy, but still talks deliriously at times, the pulse becomes much slower and unsteady, and the patient generally complains still of head-ache. There is at this time, even in the youngest children, a very characteristic movement of the little hands to and fro over the forehead and temples, without touching the head; the child

moans too, and sobs frequently. This stage of the complaint varies in its duration from eight or ten days to a fortnight, the patient remaining all this time in its cradle or bed, prostrate on its back, but tossing its head from side to side, and moving its hands in the way described above, occasionally screaming out "Oh! my head, my head!" talking deliriously when not roused by questions distinctly and repeatedly put to it, and with a more constant expression of distress in its countenance. It will now generally be discovered to have a squint, or to look cross-eyed, the squint being more or less permanent; and there is also occasional convulsion of the muscles of the face. The pulse at length becomes more variable in strength as well as frequency, and occasionally intermits; sometimes there is a sudden increase in its frequency, so that it becomes too rapid to be distinctly counted, but this is but for a short time, and it soon falls again below its natural standard. More general convulsions now vary the distressing scene, and the coma or state of stupor in the intervals is more deep, with low inarticulate mutterings; and at some period, generally between the fifteenth and twentieth day of the disease, the fatal termination takes place.

The directions for the treatment of this formidable disease are very simple; and indeed they are so, and are also very similar in all acute inflammations of internal parts; but you must not hence infer that you are qualified to enter upon the task—

by no means ; for I must here repeat to you, that the greatest acumen towards successful practice is required to ascertain the nature of the individual case, not to decide upon the appropriate remedies. And I must observe of the disease before us, that every one of the symptoms taken separately may, and often does, take place under circumstances very different from active inflammation, and that sometimes two, three, or four of the symptoms here detailed may be grouped together without deep-seated inflammation of the brain, denominated hydrocephalus. You must therefore consider the history of the disease, which I have given, as a beacon to excite alarm, and to urge you to press upon the patient's friends the necessity of early professional aid ; and when your professional friend has decided that the patient is labouring under the formidable disease which we are now treating of, you must bear him out in the bold practice which he will recommend, and encourage the friends to submit to what is proposed, by holding out reasonable hopes of recovery, particularly if the disease be in its first stage, for hydrocephalus is by no means the necessarily fatal disease it is generally imagined to be.

The practice consists in bleeding, purging, affecting the system with mercury, and applying cold to the head. The bleeding must be both general and topical ; from four to eight ounces of blood, according to the age of the little patient, should be taken from the arm, and from six to a dozen leeches

applied to the temples or forehead. Calomel combined with jalap, and followed up by an aperient mixture of salts, should be immediately commenced with, and continued till brisk purging is effected. The hair should be cut short, and the head enveloped in cloths kept wet and cold with vinegar and water, and a blister may be applied between the shoulders, but not on the head. After the bowels have been acted upon six or eight times, calomel in doses of one or two grains is to be given every two, three, or four hours, according to the urgency of the symptoms, and with this I am in the habit of combining digitalis, giving a quarter of a grain of the powder to a child of eight or nine years of age with alternate doses of the calomel, that is once in six or eight hours; or sometimes I prescribe five or six drops of the tincture in a saline draught, or in a little dill-water or other aromatic. The digitalis is given in the early stage of the disease with a view of reducing vascular action, and in the latter stage as a diuretic. The general bleeding will sometimes be to be repeated, and the leeching always; and the whole depleting and mercurial plan of treatment is to be persevered in until great improvement is apparent, or until evident symptoms of feebleness and sinking begin to show themselves.

The viscera or organs in the chest, which is the second great cavity, are the heart and lungs, both of which, with the serous membranes that invest them, are not unfrequently the seat of inflammation.

INFLAMMATION OF THE HEART is called carditis, and that of its investing membrane pericarditis, but for all practical purposes they may be treated of together. When a person in previously good health is seized suddenly, or immediately after a chill fit and succeeding hot fit, with an acute and permanent pain in the left side of the chest, without cough, and with little, if any, difficulty of breathing, you may reasonably suspect inflammation of the heart. The other symptoms are a full hard pulse, somewhat quicker than natural, and sometimes irregular or intermitting, and all the usual symptoms of high inflammatory fever. The exciting cause of such an attack of simple active inflammation of the heart is either exposure to cold and moisture, excessive bodily exertion, or imprudent indulgence in cold drink whilst heated with exercise. It is, however, a rare disease. The treatment of it is active depletion by bleeding and purging, very low diet, moderation in the quantity of drink even if it be plain water, and complete rest or avoidance of exertion.

There is another species of inflammation of the heart, or more frequently of the membrane that covers it, which is of more common occurrence; and this is *rheumatism of the heart*. It seldom, if ever, comes on as an original attack of disease, but during the progress of acute rheumatism, or, as it is commonly called, rheumatic fever. At any period of the acute stage of this painful disorder the heart may suddenly become the seat of severe pain, and

the beating of it become inordinate both in frequency and force ; in which case the pulse of course partakes of the same disturbed action, becomes rapid, and full, but not always hard ; it is also generally unequal and intermitting. It sometimes happens that these symptoms arise simultaneously with the cessation of the original rheumatic pains and swellings of the joints, but this is by no means universally the case, for I have frequently seen the symptoms of carditis arise and become intense, without any diminution of swelling, tenderness, or pain on motion of the rheumatic limbs. Neither is it the consequence of neglecting the bold depletory practice recommended for acute rheumatism, for I think I may say, that I have observed in my own practice that it has occurred most frequently where general bleeding had been carried to the greatest extent ; yet even in these cases the inflammatory nature of the attack on the heart and heart-pulse cannot be doubted, as its consequences have been plainly developed by after-symptoms, and have been satisfactorily proved by examinations after death.

The treatment of rheumatic inflammation of the heart requires great judgment, and I must caution you against taking away blood to the extent recommended in simple carditis. A few ounces drawn from the arm will mitigate the pain and moderate the tumultuous action of the heart, and this small bleeding may be repeated daily, or on every alternate day, till by this and other means the symptoms

of inflammation are subdued: the other means consist in giving discreetly colchicum, digitalis, calomel, and anodynes; and in improving the previous low regimen temperately, by giving now and then a tea-cupful of strong broth, and even a little weak wine and water, when the sensation of sinking requires it. I prefer giving a moderately full dose of colchicum, say forty drops of the wine of colchicum once in twenty-four hours, rather than small doses more frequently. Eight or ten drops of tincture of digitalis with twenty of Hoffman's anodyne may be given in a saline draught every six hours, and one or two grains of calomel with the eighth of a grain of opium also every six hours in the intervals between the doses of the former medicine. The ordinary effects of inflammation of the pericardium, as of all serous membranes, are either adhesions, or a deposition of serous fluid pellucid or opaque, homogeneous or containing filaments or flocculi of denser matter. The consequence of adhesions is a disturbed action of the heart, and sometimes its enlargement, for the removal of which no medical treatment will avail, but a quiet life and avoidance of everything likely to increase the action of the heart must be strictly enjoined. For the dropsy of the heart, digitalis with mild mercurials steadily persevered in, will often prove a temporary and sometimes a permanent cure.

I may now take leave of this subject by observing, that when rheumatism of the heart has once

taken place, palpitations and a hurried state of circulation are ever after easily excited, and similar attacks of a rheumatic character are more likely to occur. I am also disposed to believe, that original slight malformations of the heart dispose to its becoming the seat of rheumatic inflammation during the attacks of rheumatic fever.

Inflammation of the mucous membrane lining the air-tubes and air-cells of the lungs is called BRONCHITIS. We have already mentioned the symptoms and described its treatment, first in the letter on fevers, where we stated that this species of inflammation is not an uncommon attendant on fevers in certain seasons; and again in the eleventh letter, where we described catarrh or a common cold as being a mild or moderate degree of bronchitis. We must now therefore speak of it in its genuine form, as unconnected with ordinary fever, and in a severer grade than when denominated catarrh. It is a disease of the cold months, and it usually invades the patient after an undue exposure to cold and wet. A sensation of tightness and soreness diffused over great part of the chest, particularly in front under the sternum or breast-bone, with so much pain in taking a full inspiration as to make the breathing very short and very quick, and the pain so augmented by coughing as to induce the patient to suppress it all he can, which gives it the character described by the terms short, hacking, suppressed cough, these together with alternate chilliness and feverish heat, and a quick pulse with

transient and wandering pains, constitute the early symptoms. The breathing soon becomes wheezy and occasionally whistling, when carefully attended to by placing the ear close to the patient's chest, and the cough, at first dry, soon becomes attended with copious expectoration of thin, glairy, saltish mucus, but without relief to the soreness in the chest or to the pain and distress in coughing. In cases, which are to terminate favourably, the mucus expectorated becomes in two or three days thicker, more tenacious, and more opaque, the cough is now not so incessant, the fever abates, and after an indefinite period from one to two or three weeks the cough and expectoration have gradually ceased, and the breathing has become natural. In very severe cases, particularly in young children, when the disease is not controlled by medical treatment, the cough does not decrease in frequency, the wheezing increases, the breathing is more hurried and laboured, the lips become purple, the extremities cold, clammy perspirations break out, and the patient dies suffocated by the accumulation of mucus, which he is unable to expectorate. The danger is considerably the greatest in very young and in very old patients. In the latter the disease often comes on more insidiously, the fever is not high, and the powers of expectoration being feeble, the patient seems to be carried off by suffocation, where there has been but a very moderate degree of previous inflammation.

The treatment of bronchitis has been pretty fully

detailed in the letters formerly referred to, and I need here only recapitulate, that after one pretty copious bleeding in adults, and free leeching in young children, the tartar emetic is to be mainly relied on, alone in the early stage of the disease, and combined with hyoscyamus, or paregoric elixir, after the first few days. From a full-grown person take away twenty ounces of blood, give two cathartic pills and half an ounce of salts, and then a quarter of a grain of tartar emetic every four hours; confine your patient to his bed, supply him with warm tea, barley water, and thin gruel, and if there is still much pain and soreness on the second day, rub the tartar emetic ointment on the chest. If the cough comes on in distressing paroxysms, particularly in the night, so as to prevent sleep, and after the mucus expectorated has become more opaque, I do not hesitate to give one full anodyne, as two grains of opium with four of antimonial powder, and on the following nights from four to six grains of extract of henbane. In infants the bleeding must be by two or three leeches; the first dose of tartar emetic should be enough to act as a vomit, say half a grain, and afterwards about a twelfth of a grain every four hours. In very old persons the bleeding must be moderate, unless it can be had recourse to within a few hours from the commencement of tightness, soreness, and painful cough: in which case a bleeding to the extent of fourteen ounces will be borne well. The

tartar emetic must be given with caution, and not persevered in if signs of feebleness, with more and more noise in the breathing, indicate increasing accumulation of mucus in the lungs; but under these circumstances three or four grains of ammonia in a fever draught, with five grains of squill pill, must be given every two or three hours. These, however, are always cases of great danger, and require for their treatment all the judgment and acumen of the established practitioner.

INFLAMMATION OF THE PLEURA, which is the lining membrane of the cavity of the chest, and by its duplicature the investing or covering membrane of the lungs, is called Pleurisy; but for practical purposes it need not be treated separately from general and acute inflammation of the substance of the lungs, which is called Pneumonia. When a patient is suffering acute deep-seated pain in one side of the chest, which is increased by a full inspiration, but not by moderate pressure on that part of the surface of the chest corresponding to the pain; and when there is cough, which is excited or aggravated by a deep inspiration; and when these symptoms are attended with a full hard pulse, feverish heat and thirst, and a foul tongue; you may fairly infer *inflammation of the lungs*, or of the pleura, or, as is frequently the case, of both. The above symptoms have usually been preceded by shivering, and the ordinary signs of a febrile paroxysm. I need

scarcely tell you that bleeding here is the sheet-anchor. The extent to which it must be carried is of course to be regulated by the violence of the attack; but you must bear in mind that in no other disease is this remedy to be more freely or confidently resorted to; and as fainting from the loss of blood is really desirable, the opening into the vein should be large, and the patient should either stand or sit erect during the operation. From twenty to thirty ounces of blood will not be too much to be drawn the first time, which will usually relieve or for a time remove the pain. If the pain return, or is aggravated, after ten or twelve hours, sixteen or twenty ounces more may be drawn, and it very seldom occurs that any further repetition is required. A recurrence of pain may, however, take place in the progress of the disease, in which case bleeding will still be the all-important remedy, and particularly if a free expectoration has not been established; and at this period leeches may be applied over the seat of pain, when there is a doubt as to the admissibility of another general bleeding. Purging by calomel and colocynth and salts must be effected early, to reduce the inflammatory tendency. Tartar emetic in quarter-grain doses every four or six hours is the next remedy, and tends greatly to promote expectoration, which it is of great importance to bring about early. If inflammation is still supposed to be going on after two or three days, I then think it advisable to commence with

two grain doses of calomel every four hours, combining with each dose three or four grains of extract of henbane to allay the cough; and if there has been little or no sleep, I do not hesitate ordering a grain and a half or two grains of opium with the night dose, provided that bleeding has been freely resorted to; but I very seldom repeat this full dose, unless in protracted cases. A blister should be applied over the seat of pain after the first or second bleeding; a strictly low diet must of course be observed: and now I may say that I have given you the bold outline of the treatment of inflammation of the lungs; leaving, however, many minutiae of practice for the exercise of the judgment of the medical practitioner in attendance. The age and previous constitution of the patient, the degree of violence of the attack, the early or late period at which medical relief is first resorted to, and a variety of other circumstances, will require much consideration, and demand tact in the adoption of remedial measures.

When inflammation is confined to a small portion of the lungs, it is often insidious in its attacks, its symptoms are much less violent, and are less under the control of medical treatment. Its consequences, if the inflammation be of a simple character, and the proper remedies, as local bleeding, blistering, moderate purging, and strict adherence to a spare diet, have been timeously applied, are seldom serious. If any consequences remain, they

are adhesions, and perhaps partial condensations, which, though permanent, only slightly impede the healthy office of the lungs. But when inflammation is excited in morbid growths, called tubercles, seated in the substance of the lungs, then indeed we have that destructive disease, so well known throughout these isles under the name of *consumption*.

CONSUMPTION is not of such frequent occurrence in the fens, where we both reside, as in more elevated situations, and it does not prevail so much in an agricultural as in a manufacturing population. You may, however, prepare yourself to meet with many cases even in your present abode; for, upon looking into the tables of diseases kept at our dispensary, I find upon an average of twenty years not less than twenty-one cases annually recorded, and this constitutes one in forty-two of all the physician's patients.

Consumption occurs most frequently in persons of fair and ruddy complexion, with light hair and slender frame; it is intimately connected with a scrofulous habit; from which circumstances it is apt to attack several individuals of the same family, and is therefore called an hereditary disease. It very commonly commences its ravages at that interesting age between fifteen and twenty. It is not absolutely confined, however, to any age, or to any constitution. In its progress it is very various; sometimes running rapidly through all its stages,

and completing its fatal work in a few weeks, or months, at other times occupying as many years. The first symptom may be said to be a great susceptibility to take cold, and consequent frequent occurrence of cough. The cough in its early stage is usually of that character called a dry teasing hacking cough; and has not lasted long before the patient looks more delicate than usual, is more easily chilled by exposure to cold, is sooner fatigued by exercise, is short of breath, and frequently feels transient pains in the chest. The appetite too is precarious, and the patient evidently loses flesh. Sooner or later, after, perhaps, several attacks of slight cold and cough, expectoration commences, first of a simple frothy mucus, and then of a thicker and more opaque mucus, which still is not miscible with water, so as to make it turbid when stirred about in it. During the progress of one of these attacks of expectorating cough, a little speck or streak of blood is perceived on the surface of the expectorated mucus; this mucus assumes more of a purulent appearance, and at length it is genuine pus or matter, such as is secreted from an abscess or ulcer. The friends of the patient cannot now but see his altered mien; a pallid countenance with occasional febrile flushes, a general falling off of strength and flesh, from which the disease has gained its name, a deep sepulchral voice and cough, with profuse night sweats, and frequently an exhausting diarrhœa or

purging; these are the fatal signs of confirmed consumption drawing to its close. Sometimes in a ruddy looking youth of either sex, of what is called a sanguineous temperament, the first symptom threatening consumption is a sudden copious spitting or rather coughing of blood, commonly designated the *breaking of a blood-vessel*. This, however, does not imply that there must have been any great or sudden exertion. It sometimes comes on after exposure to cold and a return to a heated apartment, sometimes during the febrile reaction after a chill, but sometimes in the night, or during complete repose in the day-time. This profuse bleeding is very apt to recur after a few days, or a few weeks; and small quantities usually appear in the sputa, or matter spit up, for several days after each attack. Sooner or later such patients exhibit all the other signs of consumption and the fatal termination is not long deferred, particularly if the patient be young, that is, under twenty-five or thirty years of age.

In describing the treatment of this scourge of English youth, of both sexes, we must acknowledge, notwithstanding the many vaunts of cure by regulars and irregulars, that we profess only to point out means of occasionally suspending the disease, and of now and then arresting its progress, but never of repairing the ravages which it has once committed on the delicate tissues of the lungs, or of removing by remedial means the morbid tu-

bercles, with which the substance of the lungs is studded in those persons who are predisposed to the malady.

When it is suspected from family predisposition, from constitutional peculiarities, or from other early premonitory symptoms, that the seeds of consumption, to speak figuratively, are already sown, it behoves the friends to adopt such precautionary means as are likely to ward off the mischief; of these a very important one is regular and healthful exercise, avoiding violent exertions, but habituating the constitution to sustain a moderate degree even of fatigue in the ordinary amusements of childhood and of youth. In the next place, the clothing should be warm in the winter and spring by wearing flannel next the skin by day, and calico by night. The chest should be well defended by high dresses, and the feet kept warm by socks, and stout shoes when out of doors. Plentiful and frequent ablution, succeeded by friction, is highly serviceable, as the shower-bath, once or twice a week, and the daily sponging of the chest with vinegar and water, tepid in winter, and cold in summer, and followed by well rubbing the surface of the body with a coarse towel, with flannel, or with the flesh-brush. The diet should be nutritious but not stimulant, as milk twice a day, and meat with potatoes or other vegetables, and some sort of plain pudding, once a day; with toast and water or milk and water for drink. I have purposely avoided

any recommendation to you to use the stethoscope in ascertaining the presence or extent of consumption, though I entertain the highest opinion of its utility in the hands of experienced persons. The external exploration of the chest by means of this instrument and by percussion is one of the greatest improvements in the study of disease, which this age has to boast of; but to take advantage of it requires more experience than any unprofessional person can be supposed to have.

When the disease has made its appearance, the medical treatment must be regulated by the nature and violence of the symptoms, and must vary too as the grouping together of the symptoms varies. If, with the ordinary appearance of a cold, there is soreness of the chest, and quick breathing, as well as quick pulse, give antimonials as directed for bronchitic affections; if there are pains in the chest, aggravated by deep inspiration, add local bleeding and blistering to the antimonial treatment. Should there be cough without febrile disturbance, allay it by anodynes, as the cough pills, or paregoric elixir. When the fever is beginning to assume a chronic character, returning every evening, or twice in the four-and-twenty hours, with flushed countenance, leaving much languor and paleness in the intervals, and with a rapid pulse, digitalis every eight hours, as ten or twelve drops of the tincture in a saline draught, and half a grain of quinine twice a day, given at times when

the fever is off, may be prescribed; and if not contra-indicated, the dose of each may be gradually increased; indeed the effect of digitalis is so uncertain, that the dose should always be moderate at first, and increased daily by five drops in each dose, until the pulse is sufficiently reduced, unless giddiness, fainting, or sickness occur, in which case the dose must be again diminished by five drops. If in the progress of this malady a spitting of blood occurs, it must be treated as directed in my letter on hemorrhages; and when, as also frequently happens, a diarrhoea or purging takes place, it must be restrained by chalk mixture and laudanum, as directed on former occasions. The profuse perspiration, which so frequently occurs during sleep in the advanced cases of consumption, is sometimes controlled by acids, as ten or twelve drops of elixir of vitriol two or three times a day; and this I usually combine with laudanum or henbane, when the cough and expectoration are at the same time urgent symptoms.

Thus, you see, all that I suggest in the treatment of this disease, only goes to the mitigation of symptoms, for I frankly confess that I know of no panacea, no single remedy, for consumption, nor indeed any defined plan that is applicable in all cases; and as the judgment of the practitioner must be exercised, to decide upon the appropriate practice in each individual case, I shall close these desultory observations by one or two other instruc-

tions for cases that are not arrived at a hopeless stage. It frequently occurs that young females predisposed to this disorder lose their colour, become listless, and indisposed to take exercise, have precarious appetites, and experience a diminution, or perhaps total suppression of their accustomed natural and healthful discharge. Whether this morbid state occurs previously to any chest affection, or after one or more attacks of cough with mucous expectoration, the proper treatment is to give the compound steel pills or steel-drops, with moderate doses of quinine; and this may be cautiously tried, even when the patient is labouring under some cough, in which case the quinine may be made into pills with the extract of henbane, one grain of the former to three of the latter for a dose, to be taken every six hours. In more advanced cases of the disease, when the expectoration has just assumed a puriform appearance, but does not bear all the characters of pure pus, it has sometimes proved serviceable to open an issue, or form a seton in the side over the part, where, from the pain and other internal sensations, the patient believes the principal mischief to be going on, and the trial ought, therefore, always to be made.

In all cases, and in all stages of the disease, exposure to cold is to be avoided, and, as far as can be done, a regulated temperature should be maintained through the winter months; and I must, before I conclude, say a few words on the subject

of a change of climate, though it can hardly be supposed, that cases of consumption will often come under your cognisance, where such a change of abode is practicable. I have never seen or known any good to result from removing a patient to a distant clime, when the disease was far advanced; but I have known the greatest discomfort and distress arise to the patient, and the friends, from a voyage to the West Indies, or to a less distant region, under such circumstances. In the early stage of the disease, or where the propensity to it is indubitable, though the ravages have not commenced, I have no doubt of considerable benefit being the result of removal to a warmer situation, but it must be a protracted residence through several years, or temporary ones for several successive winters, that can be expected to eradicate the tendency. When, therefore, a patient can take up his abode in the south of France, or some favourable spot in Italy for five or six years, or when he can sojourn in Devonshire, or at Hastings in Sussex, or on the continent, from October till May, and will repeat his visit for five or six successive winters, I am a very strong advocate for its being done.

The contents of the third great cavity, the abdomen, are numerous; but as acute inflammation of some of these viscera has but few distinctive marks, and as the treatment of them varies but little, I shall not describe them all separately. We shall begin with PERITONITIS, which is an inflammation of the

peritoneum, the anatomical name for the serous membrane which lines the whole cavity, and by its various foldings covers separately every viscus. This inflammation may commence on any part of its surface, may be confined to the covering of a single organ, or even only a portion of it, or it may extend over the greater part, or even the whole of the lining membrane. As the parietes or external parts of the abdomen are soft, it will be easy to satisfy yourself by gentle pressure as to the seat and extent of the disease, by the tenderness and pain which will be excited. Partial inflammation to a small extent is usually a chronic affection, and not so easily detected; but when an extensive surface is inflamed, the disease is acute, the pain on pressure over any part of the abdomen is great, the whole body is distended, and the patient is observed to lie with his knees drawn up, this being his easiest posture; there has been chilliness if not shaking preceding the feverish heat, the pulse is very quick, and perhaps hard, but not so full as in other active inflammations, the tongue is much furred, and there is great thirst. After a restless and almost sleepless night or two, if the progress of the disease is not checked, the patient becomes delirious, the pulse extremely rapid and small, the pain, which had become intense, gradually abates, the body is more distended, perspirations break out, which afford no relief, the surface becomes cold and clammy, the breathing is short, the muttering

delirium nearly constant, and the pulse more and more feeble till death closes the scene. Early abstraction of blood is the grand remedy; one copious bleeding from the arm, if immediately followed by the application of from twenty to forty leeches over the tender part, will generally break the neck of the disease; but both must be repeated within four-and-twenty hours, if great relief has not been obtained. It must be here observed, that extensive leeching is more serviceable in this than in most active inflammations, and the repetition of general bleeding is not well borne when the disease is advanced. The medicines most to be depended upon, after active purging, are calomel, antimony, and opium combined. Two grains of calomel and half a grain of opium in a pill, with the sixth or eighth of a grain of emetic tartar in a fever draught, may be given every four hours. Warm fomentations after the leeches, first by poultices, afterwards by flannels wrung out of hot water, should be assiduously applied, till the pain and tenderness have greatly abated, and then, and not before, a large blister may be put on. A piece of hot flannel slightly sprinkled with oil of turpentine, and applied over a considerable portion of the abdomen, acts speedily as a rubefacient, and is often very beneficial; it should therefore not be neglected whenever the bleeding, general and local, has failed to produce abatement of pain in a satisfactory degree.

The effect of this peritoneal inflammation, when not subdued in its early stage, and when not sufficiently extensive or severe to bring the case speedily to a fatal termination, is either to produce adhesion of parts, which ought to move freely over each other; or to allow of the accumulation of fluids in the cavity of the abdomen, constituting dropsy. The former may be attended with some inconvenience, and partial interruption to the functions of the implicated organs; but the latter is always a severe and frequently a fatal malady, which, however, will come presently to be considered more in detail.

ACUTE INFLAMMATION OF ANY OF THE DIFFERENT VISCERA contained in the Abdomen, is generally ushered in by the same febrile symptoms, as rigors or shiverings, succeeded by heat, full, hard, and quick pulse, great pain and tenderness on pressure over the inflamed organ, foul tongue, headache and thirst; but some peculiar symptom or symptoms arising from disturbed action of the particular organ, together with the locality of the pain, will enable a skilful practitioner to define the viscus affected. Thus pain at the pit of the stomach, increased after eating or drinking, and frequent vomiting, indicates inflammation of the stomach; a bilious countenance, loaded urine, dark green or tarry brown fecal evacuations, with acute pain on the right side just below the ribs, and a sympathetic pain in the shoulder, are symptoms of

hepatitis, or inflammation of the liver; augmentation of deep-seated pain, or the temporary alleviation of it, upon the sensation of flatus or other matter moving about in the bowels, painful hard distension confined to one portion of the bowels, with costiveness, and perhaps vomiting, are the characteristics of enteritis, or inflammation of the bowels. Painful and frequent making of high-coloured urine, with urgent pain in the loins, increased on pressure, or at the lower and front part of the body, points out inflammation of the kidneys or of the bladder.

The practice in all these various inflammations is to bleed both generally and locally, to use the warm-bath and fomentations, to open the bowels freely, and to give sudorific febrifuges. If the stomach is inflamed, the mildest diluents should be given, and these sparingly; the fever-draughts should be small in quantity, and given in a state of effervescence; and when the vomiting continues after leeching and fomentation, apply a blister to the pit of the stomach, and add four or five drops of laudanum to each effervescing draught.

In inflammation of the liver, calomel purges are more particularly called for; and if yellowness of skin, and either too pale or too dark alvine discharges, continue after the acute symptoms of inflammation have been subdued, calomel, with or without opium, must be persevered in two or three times daily for a week or more.

When the kidney is the seat of inflammation, and bloody urine, or gravelly deposit in the urine, indicates irritation from calculous matter to be the cause, soda pills, or solution of potash with laudanum, will be the appropriate remedy after cupping, warm-bath, and moderate purging.

In inflammation of the bowels, besides copious bleeding from the arm, and free evacuation of the bowels, the warm-bath, external fomentation, and simple warm-water glysters, once or twice daily, are soothing; and when inflammatory symptoms are subdued, from forty drops to a dram of laudanum may be added to the evening glyster; and in these cases great attention must be paid to satisfy yourself that hardened lumps of *fæces* are not retained in the bowels, which will sometimes be the case, even though a natural purging is one of the symptoms; these may sometimes be detected by careful pressure over the abdomen; and others may be suspected, where one or more such lumps are detected amongst the fluid *fæces*. Castor oil is an excellent cathartic on such occasions.

Acute inflammation of the spleen requires no particular treatment, and chronic inflammation of that organ has been noticed as a consequence of ague. Neither is there any occasion to particularise the acute inflammation of those viscera which are peculiar to the female sex, as they are to be treated upon the general principles already laid down.

It will ever be found in practice that for one case of well-marked *acute* inflammation of any membrane or viscus, whether of the chest or abdomen, you will meet with many cases of moderate, or what is called *sub-acute* inflammation, many cases where the disease is *partial* in extent, occupying but a small portion of the membrane, or the viscus, and many cases of *chronic* inflammation, so defined from the protractedness of the disease. All these varieties occur of every grade, from the most severe or acute to the most trifling, and the judgment of the practitioner alone can decide the amount of remedial measures required in each case. General bleeding will seldom be called for, where the disease has not caused general disturbance, and local bleeding with blistering and fomentations will be the most efficacious means in all such cases.

Of inflammation occurring in the various delicate tissues, of which the EYE is anatomically composed, I shall say very little, because it would be very preposterous to suppose you acquainted with the complicated structure of that important organ, and without such knowledge it would be impossible for you to comprehend any description of the diseases to which it is liable, or to understand the application of the various remedial measures that are called for. I shall therefore only observe, that should you ever be desired to inspect a common inflamed eye, where the part that should be

white is covered with red vessels, and there is great intolerance of light, you cannot do wrong in ordering leeches, and administering a dose of physic, to save time, ere the surgeon arrives; or should you be consulted by a person who is habitually subject to soreness of the edges of the eyelids, which are so closed or glued together in a morning as to be opened with difficulty, you may confidently recommend the golden ointment, or what is equally efficacious, and much cheaper, the red precipitate ointment; and this is to be applied by means of a camel-hair pencil charged with a little of the ointment softened by heat, which is to be drawn along the roots of the eyelashes every night at bed-time.

For similar reasons I shall refrain from treating of diseases of the ear; but I may, without impropriety, recommend a very simple remedy in cases of casual ear-ache, which is usually brought on by cold, and is a common complaint in childhood; it is to drop a little cold water into the ear, and, if it relieves the pain for a time, to repeat it as often as the pain recurs.

LETTER XIII.

ON VARIOUS CHRONIC AILMENTS.

MY DEAR SON,

BESIDES those chronic or protracted diseases which have already fallen under our notice in connexion either with sudden seizures, as epilepsy, St. Vitus's dance, and hysterics; or with eruptive or other fevers, as all the varieties of chronic eruptions, neuralgia, &c.; there are many other disordered states of the constitution, of a chronic character, which have acquired specific names, the most important of which I shall treat of in this concluding letter. The two first of these, rheumatism and gout, I might perhaps with equal propriety have included amongst acute diseases, and have treated of them in former letters, as in that on fevers, or in the last on inflammations; but although they do sometimes exhibit febrile and acute inflammatory symptoms, they are so dependent upon peculiar permanent conditions of the constitution, and consequently produce such frequent and protracted states of indisposition, that they may with equal propriety at least be classed amongst chronic diseases.

To begin then with RHEUMATISM; it is a painful inflammatory affection of the tendons of muscles, and other parts of a similar anatomical formation.

In the young and full-blooded, where there is a constitutional tendency to it, and particularly in the early attacks of the disease, there is considerable inflammatory swelling of one or more of the large joints, and so much constitutional febrile disturbance, that it has in this form acquired the name of *rheumatic fever*. The exciting cause of such an attack is usually exposure to cold, the first effect of which upon the constitution is to set up an inflammatory fever, which in many cases, but not in all, commences with chilliness. Sometimes with the first attack of the fever, but oftener on the second or third day, come on severe pain, swelling, and redness of some of the large joints, usually of the knees, ankles, elbows, or wrists, rendering any motion of them painful; the feverish heat continues with a quick, full, and hard pulse; the pain of the joints and the swelling and redness around them increase, so that, if many parts are affected at the same time, the patient is unable to turn over in bed, or to move hand or foot. The tongue is thickly coated with a white or cream-coloured fur, and its edges are often of a bright red, the urine is high-coloured, and deposits a brick-dust coloured sediment. Sleep is prevented by the pain, and the restlessness is sometimes attended with delirium. If uncontrolled by medicine, the duration of the disease varies from a few days to two or three weeks, and the convalescence is slow. Happily, however, it may be much controlled by judicious me-

dical treatment, and convalescence be thus rendered more speedy, and a chronic form of the disease, which is its usual consequence, may be thus greatly obviated.

After one general bleeding in most cases, or a second within twelve hours if the fever is high, and a full dose of cathartic pills and Epsom salts, we may proceed to give colchicum, which, in rheumatism as well as in gout, seems to have a specific influence over the disease. At the commencement of the attack I prefer a full dose at bed-time to smaller doses frequently repeated, and therefore order from forty to sixty drops of the wine of colchicum, according to the violence of the attack, and if the first dose is not productive of considerable relief, and followed by some refreshing sleep, I combine twenty or thirty drops of laudanum with the same dose of colchicum next night. In the intervals I usually order a quarter of a grain of tartar emetic in a saline draught every four hours. But if on the second or third day the local inflammation is not materially subdued, I order a competent number of leeches, and give the colchicum in smaller doses and more frequently, about fifteen drops every six hours. Under these circumstances I give an intervening dose of the tartar emetic, if the inflammatory predisposition is strong, or four grains of Dover's powder at the same intervals, if the patient has but feeble stamina, or if the redness and swelling are not proportionably great with

the pain. The bowels at the same time must be kept freely open by a cathartic pill every night, and a seidlitz draught every morning. The diet must be low, and the drink simple diluents, as milk porridge, plain gruel, tea, and barley-water. In severe cases and robust constitutions, I do sometimes repeat the *general* bleeding, but of this I am the more cautious, because I think that I have observed rheumatic inflammation of the heart, as stated in a former letter, to be more apt to occur where general bleeding has been most frequently resorted to. Leeching, however, over the parts most inflamed may be frequently repeated during an attack of rheumatic fever, and this, with the subsequent poulticing and warm fomentations, affords the greatest relief, both of pain and swelling, that can be obtained from external applications. In the intervals of the leeching, and to the affected joints not under treatment by leeching, an evaporating lotion, applied warm, will prove soothing and agreeable; what I generally use for this purpose consists of one part of spirits of wine and camphor to five or six of weak goulard.

For one case of acute rheumatism, such as I have now described, you will meet with scores of cases of a more moderate character, or a more chronic form. Persons not particularly liable to rheumatism are frequently troubled with local pains after exposure to cold streams of air, after getting wet, or from travelling in cold damp weather.

These pains are of a rheumatic character, and when they occur pretty extensively, nothing is so serviceable as a warm-water or vapour-bath; and next to that the application of warm water to the feet and vapour to the head, as directed when treating of colds. In combination with this, or where such bath is not procurable, or not deemed necessary, warm diluents should be taken at bed-time, as also directed in the letter referred to. Where the rheumatic pains are more partial, sponging with warm water in the first instance, and wrapping the part in flannel at night for the first few days, and the application of some stimulant afterwards, as brandy, hartshorn and oil, or warm water with a little mustard in it, followed by brisk friction with a coarse towel, and then covering the part with flannel, will prove as serviceable as any of the hundreds of recipes with which the newspapers and periodicals and family receipt-books abound.

When persons, who are constitutionally liable to attacks of rheumatism, are exposed to cold, damp, fatigue, or distress of mind, or when their digestive organs are from any other cause deranged, they almost invariably are seized with pain and swelling of some of the joints, and in such constitutions the smaller joints are as subject to the attack as the larger ones. In such cases leeches are to be applied to the parts in number proportioned to the amount of inflammation; alterative doses of blue pill and seidlitz are to be administered in modera-

tion, and the colchicum with or without opium should be given at bed-time. It is in such cases as these that a course of warm bathing at Bath or at Buxton, with the regulated diet and early hours usually observed by invalids at watering-places, is more particularly serviceable. When in such constitutions some one part remains afflicted with rheumatic pains after the treatment here recommended has subdued the local inflammation, and improved the general health, external stimulants and friction long persevered in, have frequently very much mitigated, if not wholly removed, the pain, and restored pliability to a stiffened limb. Warm brine and then essence of mustard may be first tried, and if these do not succeed, I recommend the turpentine embrocation, which is to be applied by means of a small painter's brush, and to be washed off with soap and water as soon as smarting or a tingling sensation in the part indicates its rubefacient effect; after which the flesh-brush, or a ball of flannel which forms a good substitute, must be assiduously applied as long as the friction can be well borne. The application of this embrocation and the friction may be repeated two or three times a week, or oftener according to its effect. Rheumatism of the heart has been treated of under inflammation of that organ; and of an attack of rheumatism in any other part I shall only observe, that when its nature is satisfactorily ascertained, the treatment by local bleeding and fomen-

tation, and by colchicum, opiates, and alterative aperients internally, is to be pursued, as just now recommended for constitutional rheumatism of the joints.

SCIATICA, which is a painful affection of the thigh and leg without redness or swelling, and which commences about the centre of one buttock and runs along the outside of the thigh to the calf of the leg, and sometimes to the instep, has been very generally considered a rheumatic affection; but I am inclined to look upon it rather as an example of neuralgia, and have therefore made a few observations on it under that head. In its acute state it has been usual to bleed both generally and locally, but not often, I think, with advantage. A blister is sometimes serviceable, and after an ordinary purgative I treat the acute cases by calomel and opium; and the chronic cases by rust of iron and other neuralgic remedies, as directed in a former letter.

GOUT comes next to be considered, and although it is a distinct disease from rheumatism, the attacks are in many respects so alike, and the constitutional ailments so similar, that my description of gout will principally consist in drawing a parallel between the two disorders, stating the points in which they resemble each other, and those in which they differ. Gout, like rheumatism, usually attacks the joints, but the early fits of it more generally seize the ball of the great toe; whereas rheumatism,

in its first attacks more frequently seizes the larger joints. The redness and swelling are much alike in both, but the tenderness to the touch is greatest in gout, whilst the pain on moving the limb is perhaps most acute in rheumatism. The exciting causes of rheumatism are external, as cold, wet, and fatigue; those of gout internal, as indulgence in eating and drinking, and whatever else deranges the functions of the stomach; and the latter is much more frequently a hereditary disease. Gout shows many monitory symptoms, as heartburn, loss of appetite, and momentary twinges in the part about to be attacked; thus it is not unusual for a gouty person to awake in the middle of the night with considerable pain and tenderness in the ball of the toe, which goes off after a few minutes or an hour or two, but returns regularly for two or three nights successively before an acute attack; and in the day-time the patient is troubled with various stomach affections. Rheumatism, on the contrary, commences in most cases within twenty-four hours of the application of the exciting cause without any premonitory symptoms, and progresses regularly till the attack arrives at its height. When large joints are the seat of gout, and the inflammation is considerable, the constitution becomes disordered, and fever is induced as in rheumatism; but it seldom occurs that more than one or two large joints are affected at the same time, and therefore the feverish symptoms are less violent than in acute

rheumatism, where the shoulders, elbows, wrists, knees, and ankles, are sometimes all involved in the same attack. Gout is a disease of the rich only, rheumatism of rich and poor, but more particularly of the latter. Gout very seldom attacks the young, except where hereditary predisposition is strong, and it often appears in its severest form in those who are past the middle age, and in such as are in other respects feeble and debilitated. Rheumatism, on the contrary, in its acute form, is a disease of the vigorous and the young. Both complaints are equally apt to recur again and again in the same persons, and we therefore speak of gouty constitutions, and of rheumatic constitutions; and I must further acknowledge that, after all which has been said of their dissimilarity, there are many cases in which even able practitioners feel at a loss to decide whether to call them rheumatism or gout; and for such cases they have invented the convenient phrase, rheumatic gout; whether to hide their ignorance, or because they really believe them to be cases of the two diseases combined, I will not pretend to say; at all events, we find the phrase a convenient one, as it often satisfies the inquisitive patient or his friends.

The medical treatment of gout is almost precisely the same as that of rheumatism, with the exception of the general bleeding which is so often required in rheumatism, but is seldom if ever admissible in gout; it consists principally in leeching and warm

evaporating lotions externally, and colchicum, saline aperients, and alteratives internally. The common practice of wrapping up gouty limbs in flannel is never required, except perhaps in such patients as have formerly experienced a sudden removal or retrocession, as it is called, of the disease to the stomach or head; but in all other cases the warm lotion recommended in acute rheumatism is also the most agreeable and useful in gout. *Eau médicinale*, a French nostrum so much vaunted as a remedy for gout, is well known to be a preparation of colchicum; and the wine of colchicum as a known remedy should always be preferred, and is to be administered precisely in the same manner as recommended above in the treatment of rheumatism.

It has been already observed, that an attack of gout is usually preceded by symptoms of indigestion, and by slight momentary twinges of pain. This, of course, offers the opportunity of adopting important preventive practice, and I have known several instances of gouty subjects keeping off attacks for many months, and even years, by promptly resorting under such circumstances to a blue pill and seidlitz powders, two or three times within the week, and taking a few grains of soda, rhubarb, and ginger daily, an hour before dinner; and by observing at the same time more strictly the plain and moderate diet so necessary to be attended to

at all times by persons of a gouty habit. By a plain diet, I mean confinement to one or at most two dishes at dinner, and those simple, and not highly seasoned, as plain pudding and a joint of meat, or, *instead of the latter*, game or poultry; meat only once a day, total abstinence from malt liquor, and light brisk wines, as champagne and its imitations, and drinking only two glasses of good sound wine, port or sherry, at dinner-time. By moderate as applied to eating, I mean (to state the matter concisely) that every gouty person should leave off hungry; and I believe that by following such rules, and adopting a good deal of exercise, and early hours, even a strong disposition to gout may be materially counteracted. When severe pain suddenly seizes a gouty patient in the stomach, it is to be promptly treated by strong stimulants and opiates, as forty or sixty drops of laudanum in a glass of hot strong brandy and water, or by some of the many gout-cordials, of which each gouty subject has his favourite one. At the same time it is necessary to immerse the foot, or other part, where gouty pains and inflammation have of late appeared, but from which the gout has now disappeared or been repelled, in warm water, and to rub it with flour of mustard. Though it is well known that the application of cold will often relieve both the pain and swelling in gout, I do not myself recommend it, because it is equally

well known that alarming and even fatal instances of misplaced gout have sometimes resulted from the practice.

INDIGESTION, which is a disturbed state of the function of the stomach, is another chronic ailment; and I shall proceed to make a few observations on it in this place; it is called dyspepsia by medical authors, and this term is now pretty generally understood by patients of a higher grade, though not by such as fall under your gratuitous care. In some persons the process of digestion is naturally feeble and imperfect, but in most persons labouring under indigestion, it has been rendered so by repeated irregularities in diet, either as to quantity or quality. The ordinary symptoms are general uneasiness after meals, a sense of fulness with flatulency, or of soreness, with heat at the pit of the stomach, and a tenderness on pressure in that part, also eructation of wind, and sometimes of small quantities of food in an acid or acrid state, and occasionally nausea with sickness, and the rejection of the whole or of a greater part of the food taken. The concomitants are headache, costiveness, loss of strength and flesh, inaptitude to mental exertion, and a long catalogue of diseases, as gout, gravel, blue devils, &c. &c.

When a person experiences many, or only one or two of the above symptoms, it is time that he set himself resolutely to work to correct the growing mischief, and before you say anything to him

on the subject of medical treatment, you ought to assure him, that much more depends upon himself than upon his doctor, both as to cure and prevention. We shall suppose that you are at first consulted in consequence of an aggravation of some of the foregoing symptoms, that you find your patient complaining of fulness at the stomach and tenderness on pressure, perhaps tightness across the chest and oppression in the breathing, intense headache, a foul tongue, nausea and retching; and that you further learn, that he has lately taken a full and hearty meal. This is characteristically called a *surfeit*; you must immediately give an emetic, the stomach will thereby be emptied, and the symptoms relieved; but if the full meal has been taken some hours before, you must instead of an emetic give a brisk purgative, as two of the purging pills, and immediately afterwards a draught containing a scruple of magnesia and a scruple of rhubarb in peppermint water. In both cases you should enjoin strict abstinence for twelve hours, and great moderation ever after. It more frequently happens, however, that you are consulted by persons labouring under indigestion in the chronic form, and that you find your patient with most of the symptoms, formerly enumerated, occurring occasionally, and he tells you that he is *liable* to heartburn, flatulency, a precarious or uncertain appetite, acid or watery eructations, costive bowels, sick headache, and low spirits. You will be expected to prescribe ap-

propriate medicines for these various symptoms, as carbonate of soda or magnesia for acidity, peppermint for flatulency, aloetic pills for costiveness, blue pills and seidlitz powders for bilious headache; and all this will be perfectly right as far as it goes, but you must also here again insist upon abstemiousness, both in eating and drinking; and you must give precise directions as to future management, or you will render your patient no permanent service. A dyspeptic person, as such a patient is called, should always rise from his meals hungry, should take very little fluid, and that at the conclusion of his meal; and the quality of what he takes must be nicely regulated; your instructions on this point must of course depend greatly upon his former habits, and upon his present mode of life as to occupation, &c. If the patient is young, however, and robust, whatever his former habits have been, he ought now to confine himself to animal food in moderation once a day, to porridge, or gruel, or boiled milk, morning and evening; or, if habit has rendered tea or coffee necessary, it should be weak and in small quantity, and its hurtful qualities mitigated by the addition of a considerable portion of milk; and he should either abstain altogether from fermented liquors, or confine himself to half a pint, or at most a pint, of home-brewed table-beer at dinner-time. But to persons of feeble constitution, or to those who have long habituated themselves to stimulating diet and fermented li-

quors, meat may be allowed twice a day, as at breakfast and dinner, if the dinner hour be late; or at dinner and supper, if the former be taken as early as one or two o'clock. Half a pint of table-beer or porter may be allowed at dinner and again at supper, if he be a labourer, or a person actively employed; or one or two glasses of wine, or a little weak brandy and water may be taken at the conclusion of dinner by patients of less active habits, or by such as have formerly accustomed themselves to either.

Of meats, it is now pretty generally known, that beef is better than veal, mutton than lamb, that game is more easily digested than butcher's meat, and that all meat is rendered fitter for the stomach by keeping. Soups and broth are not so nutritious or easy of digestion as they are generally thought to be, unless a good deal thickened by some farinaceous matter, as pearl barley, oatmeal, split-peas, bread, or potatoes. Fish is neither very nutritious nor very digestible; boiled or stewed eels are the most so, and salmon the least so; and all fried fish is rendered unfit for a dyspeptic stomach. Sound beer of moderate strength, such as is brewed from twelve to fifteen gallons from the bushel of malt, is, as I observed before, the fittest beverage for a labouring or otherwise active man; and to such a person two half-pints may be allowed daily. When wine is preferred to beer it should be sherry, and the quantity most conducive to the health and com-

fort of a dyspeptic is two glasses, one taken with water during dinner, and the other without water at the conclusion of the meal. A person in the enjoyment of health and a good stomach ought not to indulge in more. When brandy is thought preferable, one table-spoonful in a quarter of a pint of water is about the quantity, and it should be taken at the conclusion of dinner; this will agree better than either beer or wine with delicate persons, whose circulation as well as digestion is feeble.

The matter of next importance to regimen is exercise. A person whose digestion is feeble will not bear exercise well before breakfast; but in the summer time, where a walk before the sun's heat be great is very desirable, I advise a dry biscuit or toast to be eaten immediately upon rising, and to very delicate persons, a cup of milk and water, and then a brisk walk before the usual breakfast. Those who are not occupied about domestic affairs should take a second walk or a ride about three or four hours after breakfast, and should never incur great fatigue. In the summer an evening walk before the dew falls will be further desirable. Having made these few general observations on the importance of abstemiousness, on the digestibility of various articles of diet, and on exercise, which are of nearly equal importance to persons in health as to dyspeptic invalids, I must revert again to the medical treatment of the latter. When the symp-

toms of indigestion, as enumerated above, are pretty uniformly present without a decided preponderance of any one, my practice is to give a digestive pill an hour before dinner, or five or six grains of carbonate of soda, the same of rhubarb, and the same of ginger, twice a day in a little peppermint water, to which I add half a tea-spoonful of sal-volatile if the extremities are cold, or the pulse feeble. When there is much limpid and tasteless fluid coming off the stomach by slight vomiting or by eructation, which constitutes the disease called *water-brash*, I find acids, as five or six drops of elixir of vitriol in water, two or three times a day, preferable to soda; and if there is pain with the water-brash, I add five drops of laudanum to each dose. When there is uneasiness in the stomach increased by pressure, and amounting to pain after meals, I never neglect the application of leeches from six to twelve to the pit of the stomach, and afterwards a blister; in such cases I give the soda and rhubarb without the ginger, and with five or six drops of laudanum twice or thrice a day. If the food is frequently rejected, I try first small effervescing draughts with a few drops of laudanum, and if these fail, I give four grains of the oxyde of bismuth in a spoonful of thick gruel two or three times a day, and often with great advantage; and I may here observe, that I have frequently seen this latter remedy very serviceable in moderating the

vomiting, which usually attends the advanced stage of either scrofulous or cancerous affection of the stomach.

The SICK HEADACHE, which attends indigestion, sometimes as a cause, sometimes as a consequence, would, from its importance as well as frequency, and from the circumstance of its becoming often a habitual disorder, particularly in females of the nervous temperament, deserve an ample consideration here, for it is a bane to happiness and comfort in thousands of instances during several days in every month, extending over a great portion of the sufferer's lifetime. It is, however, in this form of a habitual disease, rather rare amongst that class of society to whose relief I am endeavouring to qualify you to administer; besides which, I freely acknowledge, that I prescribe for patients who are habitually tormented with this disease with less satisfaction to myself, than for almost any other description of patients, because I can depend so little upon any plan that I have ever adopted. I will, however, venture to give a few general directions, as you must not infer, from what I have just said, that sick headache never occurs amongst the poor.

An occasional and severe attack of headache as well as sickness is not an unusual penalty of indiscretion to the robust and healthy, as well as to the feeble and dyspeptic, but is much more easily induced in the latter; and when sick headache is the

immediate consequence of over-indulgence in eating or drinking, or both, supposing the sickness to have been effectual in bringing away the offending matter, or that sufficient time has elapsed for its passage into the intestines, the safest prescription, though not the most agreeable, is abstinence for twenty-four hours from the time of the debauch, by which time the stomach recovers its tone; a moderate meal will then be retained, and the headache will cease. If, however, the patient will not fast, or the intensity of suffering calls for some more immediate relief, both sickness and headache will sometimes be relieved by taking small quantities of soda water with white wine, or light biscuit soaked in brandy; and sometimes by a high-seasoned chop, the quantity however taken at one time being very small.

Habitual or constitutional sick headache is a very different thing. It may be induced by the slightest indiscretion in diet, by fatigue, watchfulness, anxiety, or any over-excitement, by changes in the weather, by unavoidable deviations in the natural functions of the body, and indeed not unfrequently without any assignable cause. The patient will often go to bed and to sleep without apparently the least tendency to headache, and awake in the morning with a very severe attack. In many persons the pain usually commences after sleep, and in such it is often anticipated by a previous sensation of drowsiness. The *pain* in

the head, for it is generally rather that than headache, is mostly confined to one spot at the commencement, and travels from one side of the head to the other in the course of the attack; the attendant sickness sometimes comes on before the headache, and sometimes with it, but more frequently is superinduced some hours after the pain has commenced. The duration of an attack varies from one or two hours to as many days, its frequency from once a week to once a month, or not so often, the intensity from a moderate degree that does not disqualify the sufferer from joining in society, to a height that makes the patient call out with agony, writhe to and fro, and feel alarmed for the preservation of her senses. Females are by far more subject to sick headache than men; the middle period of life is that in which it prevails; as it seldom commences before sixteen or eighteen, and many are sufferers from it from that time till about fifty, and then become healthy; others, however, are only tormented with it for a small portion of that time, and a few have the mortification to pass over this climacteric without any diminution either in the severity or frequency of its attacks.

The preventive treatment consists in a strict observance of all the minutiae in the rules laid down for dyspeptics as to diet and exercise, the adoption of whatever is conducive to quiet cheerfulness, and to keep down excitement, and the avoidance of every circumstance that is known, from

the patient's own experience, to bring on or accelerate a paroxysm. The medical treatment during an attack is first to encourage vomiting, where the sickness predominates. This may be done sometimes by warm water alone, sometimes by the addition of about two tea-spoonfuls of common salt to half a pint of water; but if the sickness is accompanied with a feeble pulse and cold skin, immediate vomiting should be insured by giving ten or twelve grains of ipecacuanha. The effect of the vomiting in stimulating the heart to increased action, and in thus relieving the headache, is frequently instantaneous and complete. Where it is known from former experience that vomiting will not relieve the headache, or will perhaps increase its intensity, which is sometimes the case, we must try another mode of treatment, as soon as the attack is well set in, which is to apply stimulants to the stomach, as a tea-spoonful of sal-volatile in a small saline draught every two hours, and a very small mutton chop seasoned with cayenne pepper, and a wine glassful of hot wine and water, both of which may be repeated in four or five hours. This dietetic part of the practice is also applicable to such patients as have already taken the emetic with advantage. The whole plan is more particularly serviceable to patients labouring under intense headache with feeble pulse and cold extremities, induced by great mental fatigue; and in such cases the chop may be larger, and a tumbler of wine and water substituted

for the wine-glass. I could write pages on the lamentable want of success in my practice in this disease, but have nothing more to add, that is worth recording, on the subject of the adjuvantia, and shall therefore conclude with observing that quiet, exclusion of light, and retiring early to bed or to a couch, are found to render the attacks more bearable; and that the patient's own fancy may be indulged in a first or second experiment as to taking strong tea, strong coffee, ether, lavender drops, camphor-julep, or the like, as each of these has occasionally been found to afford relief.

I may, without much deviation from order, introduce the few remarks I shall offer on the subject of WORMS in the human body in this place, because their presence is influenced by the state of the digestion; or, at all events, the inconveniences arising from their presence are dependent upon a morbid state of that important function. The presence of worms in the bowels is perfectly compatible with health; this is their natural habitation, they originate here, they can live in no other situation, and until disturbed by an unhealthy state of the secretions, and consequent unnatural condition of the contents of the bowels, they are generally supposed to produce no inconvenience. During fevers and other constitutional ailments they are disturbed, and often killed, and pass off with the evacuations, but it is chiefly during a faulty state of digestion that they become numerous, and produce

inconvenience from their number and their bulk, and the symptoms then induced by the worms, blended with those of indigestion, are what are usually described as signs of the presence of worms. They are these; pains in the stomach or bowels, slimy evacuations, precarious appetite, tumid belly, sallow or leaden complexion, swollen lip, with itching at the nose and also at the fundament. Besides these, it is well known that various affections of the brain and nervous system are occasionally connected with the presence of worms, as convulsions, squinting, St. Vitus's dance, and an immense variety of symptoms, which seem dependent upon a morbid sensibility or excitability of the brain and nerves; all of which, however, frequently occur where no worms are present, and therefore can only lead to a suspicion which nothing but the expulsion of worms can set at rest.

There are as many as twelve species of worms described, as inhabiting the human intestines, but three only are common in this country, 1st, the long cylindrical one, which very much resembles the earth-worm, but is more pointed at the extremities, and is very differently constructed about the head, as well as its internal parts; 2nd, the small maw-worm or thread-worm, from a line and a half to two lines in length: and 3rd, the tape-worm, which is flat and jointed, and often many yards in length.

The CYLINDRICAL WORM is very common, and, when

detected or suspected, is best expelled by the oil of turpentine and strong doses of cathartics. To an adult I give an ounce of the spirits of turpentine in a wine-glassful of water before the patient rises in the morning, and two hours before breakfast; and whether it purges much or not, I give the next morning six grains of calomel and twenty of jalap. The oil and powder are both to be repeated in three or four days.

The MAW-WORM inhabits the lower part of the bowels, producing intolerable itching, and coming away often in large quantities both with the motions, and at other times. The most successful mode of procuring their discharge is by glysters of aloes or turpentine, and by calomel jalap and aloes given internally. I usually prescribe a tea-spoonful of powdered aloes dissolved in a table-spoonful of hot milk to be injected with a small syringe at bed-time, and a full dose of the purging powder to be taken the following morning, and both to be repeated twice a week till the annoyance is got rid of. The powder for an adult may be four grains of calomel, ten of jalap, and five of aloes.

The TAPE-WORM is but occasionally met with, and is to be suspected, when with the ordinary symptoms of worms you have severe transitory pains in the belly, with great distension, and sometimes tenderness. Turpentine is the most efficacious remedy, and may be given in the same doses, and followed by the same purgative, as ordered for the

cylindrical worm. Of other vermifuge medicines I seldom use any, but may mention, that powdered fern root in doses of a dram followed by a brisk purge, and Indian pink a dram twice a day, with a purge twice a week, are as efficacious as any. In all cases of worms, the digestion must be attended to, and the general health improved by tonics and alteratives, as recommended when treating of indigestion.

The disease known under the name of GRAVEL is the morbid secretion of sandy or stony matter in the kidneys. It is sometimes permanently lodged in this organ, and is then called stone in the kidney; but generally it passes along the urinary duct, called the ureter, from the kidney to the bladder, and, is afterwards voided with the urine either in the form of fine sand, white or dusky red, or of small stones like gravel, of different colour and hardness according to their chemical composition, which is various. The persons afflicted with gravel are generally the subjects of indigestion, and it is very commonly connected also with gout. The symptoms of its formation and lodgment in the kidney are uneasiness and pain in the loins, more frequent desire to make water, and sometimes the admixture of blood with the urine. It is however seldom suspected till, after some days of more pain than usual, sand or gravel is passed with the urine, and found deposited in the utensil. When passed in the form of sand, there is more irritation than usual in the pas-

sages, and sometimes great pain ; when in the form of gravel or small stones the pain is more acute, being occasioned by the passage of them from the kidney to the bladder. This pain occurs at intervals, and is felt for one or two days, deep-seated in the lower part of the body, inclining to one side, darting downwards from one of the kidneys towards the bladder, which lies in the front of the lower part of the body. The pain, if severe, occasions sickness and vomiting, frequent shuddering, and incessant desire to make water. Such an attack is termed a fit of the gravel, and is very often misnamed by the common people a fit of the colic. The small stone or piece of gravel sometimes lodges for days in the bladder without occasioning much uneasiness ; indeed it is now and then permanently retained there, and forms the nucleus of a large stone ; but generally speaking it is passed either immediately or soon afterwards with little or more pain according to its size and roughness, and occasionally with so little that the noise it makes in falling into the pot gives the patient the first intimation of what has occurred. Some patients have passed scores of these small stones varying in size from a pin's head to that of a horse bean.

The treatment during a fit of the gravel must be to diminish pain and prevent inflammation. If the symptoms are severe, I commence with cupping in the loins, a large common purgative lavement or glyster, and a warm bath ; and then give laudanum

and solution of potash in barley water, or if the vomiting forbid this, I administer a tea-spoonful of laudanum in a pint of gruel by way of lavement. The dose of solution of potash may be twenty drops with ten of laudanum; it may be taken in barley-water, and repeated every four or six hours. The cupping, the bath, and the lavement, may all be required to be repeated before the pain materially abates, and sometimes a bleeding from the arm to the amount of from sixteen to twenty ounces is preferable to cupping; and occasionally, where the patient is robust, and the state of the pulse indicates inflammatory action, both may be required.

In the more mild and chronic form of gravel you will find soda pills, taken freely for four or five days successively, very often efficacious in removing the pain and irritation; by freely I mean two pills three or four times a day; and this is the prescription I usually give to gravel patients, for future use, desiring them to have recourse to the pills whenever the symptoms of gravel come on: also to take a tea-spoonful of magnesia, or half that quantity of carbonate of soda, at bed-time, whenever they feel acidity at the stomach, to be careful in avoiding whatever occasions such acidity, and to follow all the rules laid down for the guidance of dyspeptics.

I shall now conclude this letter with some general observations on DROPSY. This word, I dare say, conveys to you the idea of a well-defined disease, the symptoms of which may be easily stated, and

the disease thereby as easily recognised, and of course the proper treatment as satisfactorily pointed out. If so, however, I must now assure you, that you are greatly mistaken. Dropsy means a collection of watery fluid called serum, in some part of the system, in unusual quantity; but so far from being a simple disease of itself, it ought rather to be considered only a symptom of disease, and a consequence of other disorders. It may occur in every natural cavity of the body that is lined with a serous membrane, as in the cavities called ventricles of the brain, when it is called hydrocephalus; in the chest, when it is called hydrothorax; or in the body, when it is called ascites. Serum may also be collected in the duplicatures of the serous membranes, thus forming dropsies of more confined dimensions, as within the duplicature that forms the heart-purse, when the disease is called hydrops pericardii, and in many other parts where there is a similar anatomical structure. Another seat of dropsy is the cellular membrane wherever situated, and as the cellular membrane under the skin has extensive communications, it necessarily happens, that when this is the seat of serous deposition, the dropsical enlargement is very general, distending the skin of the face, and particularly of the eyelids, where it is naturally loose or in folds; distending also the skin over the chest, and the whole trunk, and also that of the limbs, and particularly of the lower limbs, where the collection of water is fa-

voured by gravitation. This more universal dropsy is called by the profession anasarca.

There is still another kind of dropsy, where the fluid is contained in distinct cysts or bags of morbid growth of various sizes, from that of a pin's head to a goose's egg, or larger, and occasionally much larger. The very small ones are generally pellucid, and lie together in masses; the shape of the larger cysts is almost always globular, and in external appearance they sometimes very much resemble eggs without the hard outer shell, the cysts being white and opaque; at other times they are transparent. The contained fluid also varies in appearance; it is usually of a pale straw colour, and pellucid, sometimes of a much deeper tint, or of a chocolate colour, or of sanguineous hue, and at other times white and turbid. The site of these watery cysts, which are called hydatids, and which most physiologists now maintain to be distinct animals, is so various, that there is scarcely a part of the frame, or a variety of anatomical structure, in which they have not been found. The most common situation, perhaps, is the cavity of the abdomen, where the collection is sometimes so immense as to form the largest dropsical distension of the body that ever occurs. They are often attached to the liver or some other abdominal viscus; they are found also in the brain and in the lungs; and I have also seen a large collection of such hydatids extracted, many of them whole, and all apparently

separate from each other, from a large tumor on the back of a robust man. I may dismiss the consideration of hydatids, for the present, by stating, that we remain ignorant of the nature of these growths, we know nothing of the cause of them, and have no remedial means to offer for the cure of them, except when they can be wholly extirpated, of which I confess that I never saw an instance.

There is as great a variety in the symptoms attending dropsy as in the situation of the serous collection, and this arises as much from the previous disease of which dropsy, in most cases, is only the consequence, as from the impediment to the functions of the neighbouring organs necessarily consequent upon the presence and pressure of an unnatural quantity of fluid. Thus in case of water in the head many of the symptoms, and much of the danger, arise from the previous inflammation, and many from the pressure of the fluid on the brain. The same may be said of dropsy of the lung, dropsy of the chest, dropsy of the heart, &c., where either inflammation or venous congestion, or some other morbid condition of those important organs, has preceded the dropsy, and where the water, when deposited, must mechanically disturb the action of the lungs, heart, &c. You see, therefore, very plainly, that for a full consideration of the subject, a volume would not suffice, and you will agree with me, that many species of dropsy are more properly treated of, each under the disease that has given

rise to the dropsical effusion. This I have already done in several instances, and shall therefore, in this place, confine myself to a few observations on dropsy of the chest, dropsy of the belly, and anasarca, which I have before stated to be dropsy of the cellular membrane.

When you hear a patient, who has long been an invalid with chest affections, complaining of more permanent difficulty of breathing, increased by exercise or any unusual exertion, and of inability to lie down in bed without caution, and without more than his usual number of pillows to support the head ; when his sleep is disturbed with frightful dreams ; when you see that his feet and ankles are swollen at night, and he tells you that he makes less than his usual quantity of water, you may infer that he has water in the chest. Before you prescribe for the dropsy, consider well the state of the previous disease, and if chronic inflammation still subsists, bleed and blister before you give the appropriate remedies for the removal of the water, which, in this form of dropsy, must be diuretics, which are medicines that increase the flow of urine, rather than purgatives. Of these, squills and blue pill combined, or digitalis in some form or other, will prove more frequently serviceable than others ; but in some cases you must vary the diuretic, and may run through the whole catalogue of them, before you find one that will materially increase the flow of urine. As simple and efficacious formulæ

of the medicines I have recommended, take the following: half a grain of blue pill with four grains of squill pill, to be taken every six hours, and a tea-spoonful of sweet spirits of nitre in a little peppermint water after each; or the same quantity of blue pill with extract of dandelion three times a day, and a single dose of squill, as four grains of the powder at bed-time. When digitalis is ordered, begin with ten drops of the tincture, or two drams of the infusion in a little peppermint or ginger-tea every eight hours, and increase the dose gradually each day, until its effects are fully apparent in increasing the quantity of urine, or until it produce nausea, giddiness, and faintness, when the dose must be immediately reduced, or what is safer, two or three doses must be altogether omitted, and then the medicine resumed in smaller doses.

Water in the cavity of the abdomen, called ASCITES, can only be suspected when the quantity is sufficient to produce some enlargement, of which the patient is first made sensible by the tightness of his dress, a sense of general fulness, and some slight impediment to his breathing in the recumbent posture. Certainty is attained when the surgeon, by carefully tapping with his fingers on different parts of the distended abdomen, and at the same time holding the palm of his other hand steadily on some opposing part of the body, feels distinctly the fluctuation or movement of the contained fluid. The sensation thus produced is very

different from what is felt on tapping in the same manner, either upon solid matter or a cavity containing air; and very little practice will enable you thus to detect the presence of a fluid. The accompanying symptoms are general emaciation and shrinking of the features, dropsical swelling of the legs, feeble pulse, and paucity of urine. And as this species of dropsy is almost always a consequence of enlargement or other structural disease of some one or more of the organs contained in this cavity, you must necessarily have a variety of symptoms dependent upon the deranged functions of such organs..

The treatment of this species of dropsy is necessarily complicated from the above circumstance; and when you have satisfied yourself of the nature of the disease, of which the dropsy is the consequence, you must adopt the appropriate practice for such disease, as well as use means for the removal of the water. Of these latter means, purgatives and diuretics must be first tried, particularly the former; and, if these fail, our ultimate resort is the operation of tapping, and this, I must acquaint you, is not in itself either a formidable or dangerous operation; but in a great proportion of cases it proves only of temporary service, for this reason, that the cause of the dropsical effusion remains, and resists medical treatment. Still I am a friend to the operation of tapping, not only because the temporary relief is thus cheaply purchased, but

because it affords a better chance to our other remedial measures, and particularly so if had recourse to early. These remedial measures are, as I have stated above, purgatives and diuretics. Of the former, elaterium, which is the feculent matter deposited from the natural juices obtained by pressure from the fruit of the wild cucumber, is a most efficient one, and a quarter of a grain given in a pill every two hours for two or three times, will generally be followed by numerous watery motions and a corresponding diminution of the dropsy. The same doses repeated twice a week will sometimes reduce the whole swelling in a few weeks. Croton oil is another powerful cathartic applicable to such cases, and may be given either alone, one or two drops for a dose, made into pills with crumbs of bread, or conjoined with castor oil, one drop to an ounce. Calomel and jalap, in such doses as I have often directed in other diseases, are to be preferred, where the dropsy is connected with diseased liver; these, with gamboge and scammony, will make up our list of purgatives peculiarly applicable in the treatment of ascites or dropsy of the belly. The diuretics are numerous, and in case of failure from purgatives they must be resorted to, of which those that have been recommended in water of the chest are the most important.

There are two varieties of abdominal dropsy to which the above remarks do not apply; the first of these is the *ovarian dropsy*, where the collection

of water, amounting often to more than two gallons, is in one of the ovaries, which are naturally small bodies lying on either side of the uterus in females. This variety is distinguished by the surgeon, first from its situation, and from its occupying even in its largest state more of one side of the body than another; and secondly, from its not having been preceded by disease and derangement of other abdominal viscera, and its being consequently attended with less constitutional disturbance than ordinary abdominal dropsy. Neither purgatives nor diuretics have much, if any, influence in diminishing ovarian dropsy, and therefore should not be long persevered in to the detriment of the general health. Tapping should be had recourse to early, and may be repeated as soon and as often as the enlargement proves inconvenient. It has in many cases been repeated some scores of times, and the disease has now and then been ultimately cured by such repeated tapplings.

The second variety is the watery cysts called *hydatids*, which I have described above, and which I have never known to be either cured or relieved by purgatives, diuretics, or any other medicines. Here even tapping affords very partial relief, because the fluid being contained in distinct sacs or bags, a single tapping can only empty one sac, or at most two or three others that lie contiguous, and which may therefore be sometimes broken down by means of a probe introduced through the canula,

which is the instrument for drawing off the water. It is therefore quite accidental, whether you draw off a few ounces or a few pints, where the whole collection would measure as many gallons; it may further be observed that the re-accumulation is always rapid. Still even in such cases I have known the patient desire many repetitions of the operation, in consequence of even the small relief it had previously afforded.

We now proceed to the consideration of ANASARCA or general dropsy. The external signs of this species of dropsy are so characteristic, that you cannot easily mistake them. When the eyelids are swollen and pallid in a morning, and the feet and ankles at night, with a soft inelastic doughy feel, pitting or dinting on pressure, you may feel assured that the distension of the skin is owing to the deposition of serum in the cellular tissue, and that you have here the commencement of anasarca. This partial swelling of the face and legs, which is commonly termed *œdema*, is not an uncommon attendant upon diseases of debility, and is frequently a symptom in chlorosis, or, as it is vulgarly called, the green sickness, in which latter case a brisk cathartic or two of jalap and cream of tartar, with the appropriate tonics, as steel and quinine, will usually disperse the swelling. When this *œdema* of the legs is a symptom of dropsy in the chest, or in the abdomen, it will be removed by the treatment appropriate to those disorders, when such disorders

are curable. In cases of more general anasarca, the dropsical effusion soon distends the skin of the whole lower limbs, then of the whole trunk; and this sometimes so rapidly, that in a few days the patient becomes cumbrously large, and his breathing is mechanically impeded. The secretion of urine is uniformly scanty, and the remedies are such, as will either increase largely the flow of urine, or procure copious watery discharges from the bowels. In a few cases, where the patient is of a robust constitution, with the pulse full and hard, or where the dropsical swelling is consequent on suppressed perspiration, or repelled eruption of the skin, a general bleeding may properly precede the other remedies. I have found purgatives, particularly full doses of cream of tartar and jalap, as half an ounce of the former, and half a drachm of the latter, two or three times a day, more speedily successful than diuretics, and sufficiently lowering to remove the inflammatory state of the system, which undoubtedly often accompanies anasarca; I have found this active purging speedily successful in the rapid cases of watery deposition, which sometimes occur after scarlet fever. If jalap and cream of tartar fail, you must try elaterium and the other purgatives recommended for ascites, with more or less vigour, as the disease is more or less urgent. In the slower and more partial depositions of course less active means are required, and in such, perhaps, diuretics may be more suitable;

and of these none is so efficacious as digitalis. In obstinate cases, puncturing the legs with the needles used for acupuncture will relieve the distension, and with less risk than punctures made by the lancet; but even these will sometimes be followed by erysipelas and mortification in very debilitated subjects. A more safe mode of producing a discharge of the fluid, though by no means so uniformly successful, is to cover the legs with cabbage leaves previously stript of their large fibres, and rolled to make them more pliable. This will sometimes produce a copious oozing, and trickling of moisture from the surface, and considerably diminish the swelling; the leaves should be removed daily. The main dependence for a cure, however, is upon the successful operation of purgatives or diuretics; and the purging is often necessarily carried to such an extent as to demand the use of tonic medicines and a nourishing diet, so that it is not unusual to give very strong purgatives for a day or two, and then quinine or steel medicines for a few days to renovate the strength, before repeating the purging medicines. With this imperfect because concise account of a very important derangement in the bodily health I conclude this letter, and with this letter conclude my present correspondence; not, however, without informing you, that there remain many diseases having appropriate names, as well as many morbid deviations from health, which have no place assigned them in our nosolo-

gical system, left undescribed in these letters ; some of which it would have been improper to have introduced, because the letters are designed for general readers ; and others would have required much deep consideration and extended inquiry, which would not have been compatible with the proposed size of the present work.

So difficult is it to condense, and at the same time to be perspicuous, that I fear I have often failed to make you comprehend my meaning, from a desire not to be tedious, and sometimes have become tedious from my desire to be explicit. Hoping, however, that my attempt may prove in some degree useful, I conclude with urging you again to seek the superior aid of regularly educated medical practitioners, whenever you entertain doubts as to the nature of the disease or of the appropriate treatment, as well as when you are satisfied of the urgency or importance of the accident or disease which is brought before you.

Your affectionate Father,

F. SKRIMSHIRE.

Peterborough, June, 1838.

APPENDIX.

TABLE I.—ESSENTIALS FOR THE VILLAGE PASTOR'S MEDICINE CHEST.

Familiar Names.	Druggist's Names.	Convenient Quantities.	Dose for an Adult.	Dose for a Child 5 years old.
Antimonial powder	Pulvis antimonialis	2 ounces	4 grains	2 grains.
Arsenic—or ague-drops	Liquor arsenicalis	4 ounces	8 drops	4 drops.
Blue pill	Pilula hydrargyri	2 ounces	5 grains	3 grains.
Calomel	Hydrargyri submurias	2 ounces	6 grains	4 grains.
Dover's powder	Pulvis ipecacuanhæ compositus	1 ounce	12 grains	3 grains.
Epsom salts	Sulphas magnesiæ	2 pounds	1 ounce	1 ounce.
Goulard	Liquor plumbi subacetatis	$\frac{1}{2}$ pint	With 40 times of water as a lotion.	
Jalap powder	Pulvis jalapæ	$\frac{1}{2}$ pound	20 grains	8 grains.
Ipecacuanha powder	Pulvis ipecacuanhæ	2 ounces	20 grains	8 grains.
Laudanum	Tinctura opii	2 ounces	40 drops	8 drops.
Opium in powder	Pulv. opii	$\frac{1}{2}$ ounce	2 grains	$\frac{1}{4}$ grain.
Quinine	Quinia	$\frac{1}{2}$ ounce	2 grains	$\frac{1}{2}$ grain.
Rhubarb powder	Pulvis rhæi	4 ounces	$\frac{1}{2}$ drachm	10 grains.
Soda powder	Pulvis sodæ carbonatis	4 ounces	6 grains	4 grains.
Tartar emetic	Antimonium tartarizatum	1 ounce	2 grains	$\frac{1}{2}$ grain.

It will be desirable to have a good supply of calico bandages of various sizes rolled up, old linen, and adhesive plaster spread on calico, and some white leather for blisters; scales and weights.

TABLE II.—COMPOUND MEDICINES WHICH MAY BE EASILY MADE UP AT HOME.

Familiar Names.	Prescriptions.	Dose for an Adult.	Doses for Child 5 years old.
Acid solution of Epsom salts	Diluted sulphuric acid one part, water (with as much Epsom salts as it will dissolve) seven parts	1 ounce .	2 drams.
Aloetic pills . . .	Powdered aloes, any quantity made into a mass with spirits of wine	5 grains .	3 grains.
Alterative pills . . .	Compound extract of colocynth two parts, blue pill one part, mix intimately	5 grains .	3 grains.
Anodyne fomentation .	Poppy-heads cut four ounces, chamomile-flowers two ounces, water four pints, boil fifteen minutes, and strain	External. 10 grains .	4 grains.
Cathartic or Purging pills .	Calomel one part. compound extract of colocynth four parts		
Chalk mixture . . .	Prepared chalk and powdered gum-arabic, of each half an ounce, sugar a quarter of an ounce, water a pint, rub and mix	1 ounce .	2 drams.
Cough pills . . .	Tartar emetic one part, extract of henbane five parts, Dover's powder and squill pill, of each twenty parts, syrup enough to make a mass	15 grains .	5 grains.
Digestive pills . . .	Cayenne pepper one part, powdered aloes and extract of dandelion, of each two parts	5 grains .	2½ grains
Elixir of vitriol or diluted sulphuric acid . . .	Oil of vitriol or sulphuric acid one part, added by little and little to ten parts of water	12 drops .	4 drops.

Fever draught or mixture	Spirits of mindererus one part, water two Or, Tartaric acid and carbonate of potash, of each twenty grains, water an ounce and a half Or, Concrete lemon juice fifteen grains, or fresh lemon juice half an ounce, to carbonate of potash twenty grains, with an ounce and half of water Sal ammoniac eleven parts, saltpetre ten, Glauber's salt sixteen, powdered and rubbed together, and gradually added to water Dried leaves of digitalis or foxglove a drachm, boiling water half a pint, after four hours strain Unslaked lime a quarter of a pound, pour on it six pints of water and stir; after standing in a covered vessel three hours, bottle it and cork; of this take the clear liquor for use Lime water and olive oil, equal parts Solution of subcarbonate of ammonia one part, olive oil two parts Of the cocculus suberosus or indicus powdered one dram, lard one ounce Powdered opium one part, white lead two, powdered gall-nut four, and lard eight Oil of peppermint twenty drops on a large lump of sugar to be put into a pint of water	1 ½ ounce 1 ½ ounce 1 ½ ounce External, to produce cold ½ ounce 1 drachm To make the lime liniment External for burns External for sore throat External for scald-head Applied to inward piles Two table- Two tea- spoonfuls spoonfuls
Freezing powder or mixture		
Infusion of foxglove . . .		
Lime water . . .		
Lime liniment . . .		
Liniment of ammonia . . .		
Ointment of cocculus indicus		
Ointment for the piles . . .		
Peppermint water . . .		

TABLE II.—CONTINUED.

Familiar Names.	Prescriptions.	Dose for an Adult.	Dose for Child 5 years old.
Quassia, infusion of . . .	Quassia shavings a dram, hot water a pint, after two hours strain	1 ounce	$\frac{1}{2}$ ounce
Red precipitate ointment diluted	Red precipitate ointment one part, lard two parts; mix intimately	Externally	
Seidlitz powders . . .	Carbonate of soda a scruple, tartarised soda a dram, in one glass of water; tartaric acid a scruple in another. Mix and take in a state of effervescence	Whole one	Half one
Senna-tea	Senna leaves an ounce and half, boiling water a pint, after an hour strain	1 ounce	$\frac{1}{2}$ ounce
Soda pills	Dried subcarbonate of soda and white soap in equal parts	10 grains	4 grains
Spirits of mindererus . .	Carbonate of ammonia half ounce, vinegar a pint	$\frac{1}{2}$ ounce	$\frac{1}{4}$ ounce
Spirits of wine and camphor	Camphor one ounce, spirits of wine half pint	In lotions	
Sulphur ointment . . .	Flower of sulphur six ounces, lard a pound	Externally for the itch	
Turpentine embrocation .	Sulphuric acid one part, poured gradually upon water two parts; this poured gradually upon spirits of turpentine four parts, and the whole mixed with olive oil eight parts	Externally in rheumatism	
Turpentine liniment . .	Yellow basilicon and oil of turpentine in equal proportions melted together	Spread on pledgets in burns	
White lead ointment . .	White lead one part, lard four, wax one	To irritable eruptions	

TABLE III.—CONTAINING EVERY OTHER DRUG MENTIONED IN THE VILLAGE PASTOR'S GUIDE ;
MOST OF THEM BUT RARELY WANTED.

Familiar Names.	Druggist's Names.	Dose for an Adult, and Uses.
Aloes in powder . . .	Pulvis aloes spicatae . . .	5 grains in a pill, 10 grains in glyster.
Alum . . .	Alumen . . .	external.
Ammonia, carbonate of . . .	Ammoniae subcarbonas . . .	in spirits of mindererus.
Ammoniated copper . . .	Cuprum ammoniatum . . .	$\frac{1}{2}$ grain in a pill in epilepsy.
Bark in powder . . .	Pulvis cinchonae lancifolae . . .	20 grains.
Belladonna plaster . . .	Emplastrum belladonnæ . . .	externally as an anodyne.
Blister salve . . .	Emplastrum lyttæ . . .	external, to raise a blister.
Blue vitriol . . .	Cupri sulphas . . .	{ 2 grains as an emetic, same with opium to check diarrhoea.
Borax . . .	Sodæ sub-boras . . .	application in thrush.
Camphor . . .	Camphora . . .	external in spirits of wine.
Castor oil . . .	Oleum ricini . . .	1 ounce ; purgative.
Cayenne pepper . . .	Pulvis capsici baccae . . .	2 grains in digestive pill, also used in gargle.
Chalk prepared . . .	Creta preparata . . .	to make chalk mixture.
Chamomile flowers . . .	Flores athemidis . . .	for fomentation ; also to make a tea.
Chloruret of lime . . .	Chloruretum calcis . . .	dissolved in water, to destroy noxious smells.
Chloruret of soda . . .	Solutio sodæ chlorureti . . .	externally to foul ulcers.
Cocculus indicus . . .	Cocculus suberosus . . .	to form an ointment.
Colchicum, wine of . . .	Vinum colchici . . .	40 to 60 drops in rheumatism and gout.

TABLE III.—CONTINUED.

Familiar Names.	Druggist's Names.	Dose for an Adult, and Uses.
Cream of tartar . . .	Potassæ supertartas . . .	½ ounce alone, or 1 dram with jalap.
Croton oil . . .	Oleum croton . . .	2 drops in a pill, powerful purgative.
Dandelion extract . . .	Extractum taraxaci . . .	a component in various pills.
Elaterium or wild cucumber . . .	Extractum elaterii . . .	¼ grain in a pill in dropsy.
Foxglove powder . . .	Pulvis digitalis . . .	1 grain, diuretic.
Foxglove tincture . . .	Tinctura digitalis . . .	8 drops at first, gradually increased.
Gall-nut . . .	Gallæ . . .	in pile-ointment.
Gamboge . . .	Cambogia or gambogia . . .	4 grains strong purge.
Ginger . . .	Pulvis zingiberis . . .	5 grains in digestive pills and powders.
Glauber's salt . . .	Sodæ sulphas . . .	1 ounce purgative.
Green vitriol . . .	Ferri sulphas . . .	in steel pills, and externally in ringworm.
Grey powder . . .	Pulvis hydrargyri cum creta . . .	6 grains with Dover's powder in diarrhœa.
Gum arabic . . .	Acaciæ gummi . . .	in chalk mixture.
Hartshorn . . .	Spiritus cornu cervi . . .	external with oil.
Hemlock extract . . .	Extractum conii . . .	4 grains anodyne.
Henbane extract . . .	Extractum hyoscyami . . .	4 grains anodyne.
Hoffman's anodyne . . .	Spiritus ætheris sulphurici com-positus . . .	½ dram slightly anodyne.
Lard . . .	Adeps suillæ . . .	to form ointments.

TABLE III.—CONTINUED.

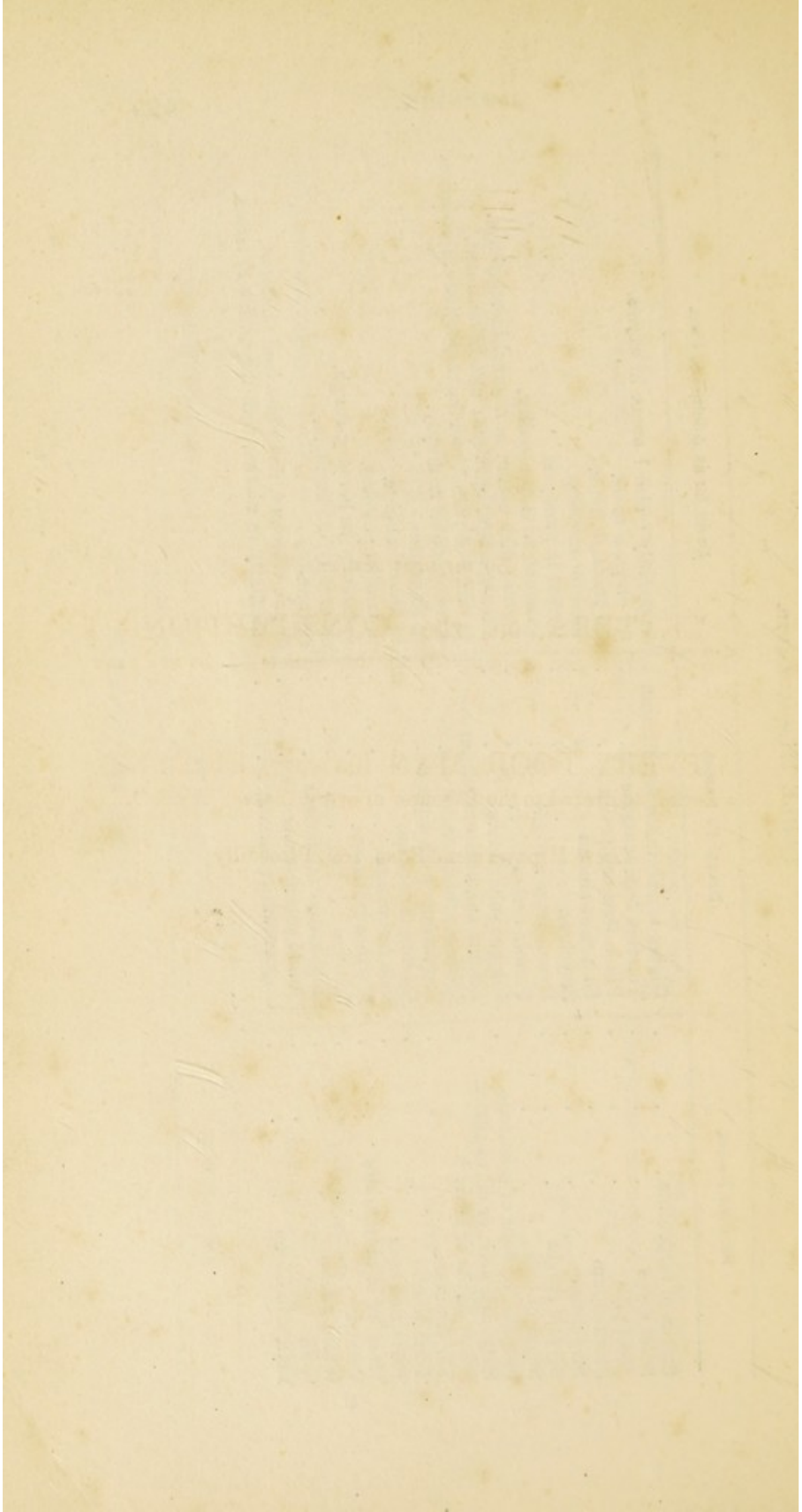
Familiar Names.	Druggist's Names.	Dose for an Adult, and uses.
Lemon acid concrete . . .	Acidum citricum . . .	to make fever draughts.
Liver of sulphur . . .	Potassæ sulphuretum . . .	to make Harrowgate water.
Lunar caustic . . .	Argentum nitratum . . .	$\frac{1}{4}$ grain in epilepsy, also externally to sores.
Magnesia . . .	Magnesiæ carbonas . . .	a few grains to correct acidity.
Milk of sulphur . . .	Sulphur precipitatum . . .	a tea-spoonful as a mild aperient.
Muriatic acid . . .	Acidum muriaticum . . .	with nitrous acid in acid mixture, also in gargles,
Nitric acid or aquafortis . . .	Acidum nitricum . . .	with the former, also externally in ring-worm.
Oil of peppermint . . .	Oleum menthæ piperitæ . . .	to make peppermint water.
Opodeldock . . .	Linimentum saponis compositum . . .	externally.
Oxide of bismuth . . .	Bismuthi subnitras . . .	4 grains in heartburn.
Oxymel of squills . . .	Oxymel scillæ . . .	a tea-spoonful with paregoric in coughs.
Paregoric elixir . . .	Tinctura camphoræ composita . . .	a tea-spoonful in coughs.
Plummer's pill . . .	Pilula hydrargyri submuriatis } composita . . .	5 grains once or twice a day in some eruptions.
Poppies . . .	Papaveris capsulæ . . .	to make fomentation.
Potash . . .	Potassæ carbonas . . .	in fever draught.
Pyroligneous acid or concentrated vinegar . . .	Acidum aceticum fortius . . .	externally in ring-worm.
Quassia . . .	Quassia lignum . . .	to make the infusion.

TABLE III.—CONTINUED.

Familiar Names.	Druggist's Names.	Doses for an Adult, and Uses.
Red precipitate	Hydrargyri nitrico oxydum	externally alone, and in ointment.
Red precipitate ointment	Unguentum hydrarg. nitrico oxydi	externally in ulcers.
Rhubarb powder	Pulvis rhei	4 grains as a stomachic, $\frac{1}{2}$ drachm as an aperient.
Rhubarb compound pill	Pilula rhei composita	10 grains ; aperient.
Rust of iron	Ferri subcarbonas	30 grains or more.
Sal-ammoniac	Murias ammoniæ	external in lotion.
Saltpetre	Potassæ nitræs	5 grains, also in a gargle.
Sarsaparilla extract	Extractum sarsaparillæ	1 dram three times a day.
Sal-volatile	Spiritus ammoniæ aromaticus	1 dram, stimulant.
Scammony compound powder	Pulvis scammoniæ compositus	8 grains, purgative.
Senna leaves	Folia sennæ	to make tea or infusion ; aperient.
Simple ointment	Unguentum simplex	externally.
Soap plaster	Emplastrum saponis	externally.
Soda, carbonate of	Sodæ carbonas	in seidlitz powders.
Soda dried	Sodæ subcarbonas exsiccata	To make soda pills.
Solution of potash	Liquor potassæ	15 drops in gravel.
Solution of subcarbonate of ammonia	Ammoniæ carbonatis aqua	to make liniment of ammonia.
Squill powder	Pulvis scillæ	4 grains, diuretic.
Squill compound pill	Pilula scillæ composita	10 grains, diuretic.

TABLE III.—CONTINUED.

Familiar Names.	Druggist's Names.	Doses for an Adult, and Uses.
Spirits of turpentine	Oleum terebinthinae rectificatum .	externally; also 1 ounce in worms.
Steel drops	Tinctura ferri muriatis .	12 drops, a tonic.
Steel pills	Pilula ferri composita .	10 grains, a tonic.
Stramonium	Datura stramonii .	used for smoking.
Strychnine	Strychnia .	$\frac{1}{8}$ grain in paralysis.
Styptic fungus	Byssus septica .	external, to stop bleeding.
Sugar of lead	Plumbi acetas .	1 grain with opium in internal hæmorrhage.
Sulphur, or flour of brimstone	Sulphur sublimatum .	a tea-spoonful aperient; also in ointment.
Sulphuric acid, or oil of vitriol.	Acidum sulphuricum purum .	in elixir of vitriol, and the turpentine embrocation.
Sweet spirits of nitre.	Spiritus ætheris nitrici .	a tea-spoonful in dropsy.
Tar ointment.	Unguentum picis liquidæ .	in ringworm.
Tartaric acid	Acidum tartaricum .	in fever draughts.
Tartarised soda	Soda tartarizata .	in seidlitz powders.
Tincture of cantharides	Tinctura lyttæ .	externally in hooping-cough.
Veratria .	Veratria .	externally in neuralgia.
Warm plaster	Emplastrum calefaciens .	externally.
White lead	Plumbi subcarbonas .	in pile ointment, and white lead ointment.
Yellow basilicon	Unguentum resinosum .	externally in ulcers; with turpentine in burns.



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