

Observations on ulcers of the legs, and other parts : shewing that the most obstinate and intractable cases may be speedily cured by mild methods of treatment : to which are appended some remarks on scrofulous disorders / by Archibald Maxfield.

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OBSERVATIONS
ON
ULCERS OF THE LEGS,
AND OTHER PARTS,
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THAT THE MOST OBSTINATE AND INTRACTABLE CASES
MAY BE
SPEEDILY CURED BY MILD METHODS OF TREATMENT.
TO WHICH ARE APPENDED SOME REMARKS ON
SCROFULOUS DISORDERS.

BY
ARCHIBALD MAXFIELD,

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LONDON:
JOHN CHURCHILL, PRINCES STREET, SOHO.

1842.

PREFACE.

In the following pages some cursory remarks will be found on several varieties of Ulcers of the Legs; the intention of the Author was not to enter at large into their separate consideration, but to speak of a few of the prevalent errors in the treatment of Ulcers in general, and to inculcate a more efficacious plan for their local management than is usually pursued. Should he succeed in diminishing the sufferings of even a small portion of the number of those who suffer from these harassing and distressing maladies, it will be a very gratifying recompence for his trouble in penning this essay.

Bernard-Street, Southampton, 1842.

THE
COURT

The Court is composed of the following members:

1. The Chief Justice of the United States
2. The Associate Justices of the United States
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At the time of the meeting of the Board of Directors of the American Chemical Society, the following resolutions were adopted:

The Board of Directors of the American Chemical Society, in its meeting held at New York, N. Y., on the 15th day of May, 1910, adopted the following resolutions:

Resolved, That the Board of Directors of the American Chemical Society, in its meeting held at New York, N. Y., on the 15th day of May, 1910, do hereby recommend to the members of the Society that they should be notified of the meeting of the Board of Directors of the American Chemical Society, in its meeting held at New York, N. Y., on the 15th day of May, 1910, by the publication of a notice in the Journal of the American Chemical Society, in its issue for the month of May, 1910, to the effect that the meeting of the Board of Directors of the American Chemical Society, in its meeting held at New York, N. Y., on the 15th day of May, 1910, will be held at New York, N. Y., on the 15th day of May, 1910, at the Hotel New York, New York, N. Y., at 8 o'clock P. M.

Resolved, That the Board of Directors of the American Chemical Society, in its meeting held at New York, N. Y., on the 15th day of May, 1910, do hereby recommend to the members of the Society that they should be notified of the meeting of the Board of Directors of the American Chemical Society, in its meeting held at New York, N. Y., on the 15th day of May, 1910, by the publication of a notice in the Journal of the American Chemical Society, in its issue for the month of May, 1910, to the effect that the meeting of the Board of Directors of the American Chemical Society, in its meeting held at New York, N. Y., on the 15th day of May, 1910, will be held at New York, N. Y., on the 15th day of May, 1910, at the Hotel New York, New York, N. Y., at 8 o'clock P. M.

ON ULCERS.

An ULCER may be defined an excavation formed on the surface of the body, from which pus, or some other kind of discharge, exudes; and the process by which such sores are occasioned is called ulceration, or absorption, from the presumed manner in which the cavity is induced. But the series of phenomena by which this removal, by imperceptible degrees, of portions of the solid flesh is really effected, so that an ulcer is the result, is an inquiry so subtle that it has hitherto eluded every explanation that has been offered, that can be considered perfectly satisfactory and convincing. Indeed, pathologists of the present day are advancing opinions and theories on this mystery of nature, which are directly opposed to the views entertained by those who pursued similar inquiries in the past generation.

But as the object of this publication is not of a theoretical nature, but is intended to be entirely practical, I shall pass over the investigation of those morbid processes, and proceed at once to the consideration of the nature, causes, and best modes of curing ulcers after they are formed—an inquiry more immediately interesting to those who have the misfortune to suffer from such diseases.

Every experienced surgeon will admit that the lower extremities are more prone to the formation of ulcers than other parts of the body, and that they are also very often difficult of cure; at least, by the means commonly employed. And although the combined consideration of the dependent situation of the legs, and their remoteness from the centre of the circulation, which is supposed to render them more disposed to ulcerate than parts situated nearer to the heart, may not be sufficient fully to account for the above facts,—it is unquestionable that those circumstances, from being unfavourable to the free course of the blood, must have considerable influence in giving to them a greater susceptibility to ulcerous diseases; and for the same reason must prove a hinderance to recovery from them.

The great weight the legs have to sustain, the heavy burdens that are occasionally borne by the labouring population, the many hours in the day persons in active life are obliged to be on foot, and consequently in a position unfavourable to the upward course of the blood, are conditions which tend to produce venous congestion, and by its continuance vascular enlargement; and this undue accumulation of that fluid in the lower extremities, and the altered state of the vessels, are the great predisposing and exciting causes of a very large proportion of the ulcers that occur in those situations.

The more exposed position of the lower extremities to accidental violence, is another reason also why ulcers more frequently form on them than in other parts of the body; but ulcers that result from even severe bruises and other injuries, often get well with the simplest treatment when the legs have been previously in a sound condition, and the body is in good health; but when the contrary states exist, when the health is disordered, or the extremities are overcharged with blood, or an enlargement of the veins has taken place, even a slight kick, or a little abrasion of the skin, or the bite of a dog, may soon degenerate into a very extensive, foul, and obstinate ulcer.

In females, independently of the considerations just mentioned, the circumstance of child-bearing so frequently occasions congestion in the lower parts of the body, by the direct impediment which the increased dimensions of the womb offers to the free transmission of the blood to the heart, that, I believe few women escape even from their first accouchement without more or less of permanent augmentation in the size of the veins in the lower extremities.

This condition of the blood vessels renders persons peculiarly liable not only to serious ulcerations from even slight injuries, but also to their occurrence without external violence, or any other apparent exciting cause; and

accounts in a great measure for the fact, that females suffer much more frequently from ulcers on the legs than males, in whom such a state of the vessels is comparatively rare.

Bearing all these considerations in mind when a sore leg is presented to notice, a careful examination should be made into the state of the veins, in order to ascertain how far they affect the sore, either as an exciting cause, or as keeping up so much permanent irritation as to prevent its healing. This is a most important inquiry in all ulcerous diseases of the legs, because it involves the consideration of the great fundamental principle of treatment, and is a much surer guide to us in the cure of them than an attention merely to the external character of the ulcer, and to the nature of the discharges.

If the dependent position of the legs have no direct influence in the production of their ulcerous diseases, as some surgeons maintain, it certainly must have a considerable indirect one; or else why are not the arms, which so closely resemble them in structure and organization, equally obnoxious to similar affections? In the course of the last twenty years, I have seen more than a thousand cases of ulcers on the legs produced and kept bad by an overloaded and an enlarged state of the veins, but during the whole of that time, I do not recollect a single instance in which the

same causes have occasioned or protracted the cure of any ulcer on the arm or forearm. How is this discrepance to be explained, without admitting that much appears to depend on the different relative situations of the limbs with respect to the other parts of the economy—the less dependent and more frequently varied position by employment of the upper, than the lower extremities, rendering them less liable to vascular congestion, and consequently less susceptible of the predisposition to ulcerous diseases?

The tendency to congestion in the lower extremities is not equal in all persons: those of a robust and sanguineous habit of body suffer much more frequently from enlarged veins and the troublesome ulcers that result from them, than persons of meagre temperament. The middle and advanced periods of life are also the seasons when the disorder is most frequent, and females are observed to be more commonly affected than males; whilst the young of both sexes are in general wholly exempt from the varicose affection. And, although they frequently have troublesome ulcers on the extremities, they can commonly be traced to some disorder of the constitution, or to a disease of the bone beneath, which keeps up the local irritation.

One cause, then, of congestion in the lower extremities results from a plethoric habit; a second

from the position of the legs, which is unfavourable to the upward progress of the blood; and a third from mechanical pressure in the track of the veins, occasioned either by the impregnated and enlarged womb, or any other cause that will impede the circulation between the lower extremities and the heart. The continuance of this engorged state produces a permanent and an irregular dilatation of the veins, which are greatly weakened by the change, sometimes so much so, that they burst and occasion the loss of large quantities of blood. The contrary of this, however, often occurs, and they become thickened and hardened; their valves also are occasionally similarly affected and their functions impaired or destroyed by those changes.

The extent to which dilatation of the veins takes place, varies in every individual who suffers from the affection; sometimes those only on the upper surface and sides of the foot are enlarged; at others the disorder extends all round the legs and up the thighs. When any considerable impediment exists to retard the free course of the blood, the whole of the veins may become affected; the surface of the limb will then present a net-work of knotty, unequal, and purple-coloured swellings, arising from a permanent dilatation of different portions of those vessels. The larger the veins become the more troublesome they prove, and occasion a

variety of very painful ulcers, which often resist all efforts of cure, by both general and topical applications, unless used in conjunction with well-regulated support. The loss of natural power which the veins sustain by excessive engorgement, must be supplied by artificial means, for while they remain over-distended, they act like foreign bodies, in producing and keeping up irritation in the locality in which they are situated, and consequently operate continually as impediments to the healing of those ulcers with which they may happen to be complicated.

This combination of the varicose affection with ulcers of the legs, may therefore be considered the grand and most prevalent cause of the intractability of many of the diseases that occur in those situations.

The irritation occasioned by the long-continued distention of the deep-seated and superficial vessels, causes two opposite changes to take place in the structures of the contiguous parts, viz. the cellular tissue and the skin; in the one instance they become swollen, painful, soft, and spongy, and are thereby rendered very liable to ulceration, without external violence, or to take on serious morbid actions from trivial injuries. In the other instance, the limb assumes a swollen and hardened character from the interstitial deposition and consolidation of new materials in its in-

vesting fabrics. These changes in the integuments extend sometimes all round the leg and from the knee to the ankle; at others, only over that portion of it which surrounds the ulcer; and are accompanied in some instances by a slow and hardly perceptible inflammation, and in others by a more active inflammatory action. The thickened and hardened state, or solid œdema, of the integuments, as it is sometimes called, is always most palpable in those cases where the ulcer is of an indolent character; and persons often apply for advice with ulcers in which those changes have taken place on the surface of the limb, and from the vessels being obscured by those alterations, inexperienced practitioners never suspect that an explanation of the origin of the mischief is to be found in a turgid and an enlarged state of the veins; and consequently—missing the cause, fail in the cure, and the cases remain, so far as they are concerned, an opprobrium to the medical art.

Although a varicose condition of the veins most frequently causes and accompanies *indolent* sores, it frequently exerts considerable influence in causing and perpetuating ulcers of an *irritable* character, which are in general, if not always, combined also with a diseased condition of the skin and the subjacent tissues. This consideration has induced me to arrange *irritable* ulcers in the third class, or integumentary, in the proposed

classification presently to be spoken of, because I believe that they more frequently depend on those local causes than on constitutional disturbance. It is unquestionably true, that local irritation will modify diseased actions as much as idiosyncrasy of constitution, disordered health and other circumstances; and daily experience abundantly proves, that the above condition of the veins is the common exciting cause of both the chronic and the irritable affection,—and indeed, we frequently find the more intractable the one description of ulcer proves, and the more obstinate and indolent the other, the more extensive are the alterations that have taken place in those vessels.

The difference between the two affections,—the irritable and the indolent sore,—consists chiefly in the following particulars:—the former mostly prevails with persons below the middle period of life, and who are in a robust state of health; whilst the latter is most frequent among individuals in less vigorous health, and who are of a more advanced age. The irritable sores are more superficial and more painful, attacking chiefly those sensitive parts which compose the skin, which is generally in a state of subacute inflammation; whilst the ravages of the indolent ulcer often extend over a greater area and penetrate more deeply into the flesh, so as to destroy the skin, the subcutaneous tissue, and sometimes

even portions of the muscles. The discharges from the irritable ulcer are not healthy and purulent, but ichorous and peccant, and often prove in a degree corrosive to the surrounding skin. The edges of the indolent ulcer are thick, rounded, and brawny, and present a more prominent boundary to the wound than in the irritable affection; the granulating surface also in each instance has its peculiarities.

It is the irritable description of sore that so commonly baffles the skill of the practitioner. He applies a number of medicaments of reputed efficacy to the part affected; sometimes thinks of the constitutional origin of local diseases, and prescribes a suitable course of medicine, in conjunction with the perpetual panacea for all descriptions of sore legs, *rest and poultice*, but quite overlooks the immediate cause of the ulcer, viz: an engorged state of the veins and the general disease of the superficial structures. Some of the applications appear to afford temporary relief, but the sores do not get well, the patients grow dissatisfied and at length seek other advice; sometimes not till after many months of useless—nay worse—injurious confinement. Long suffering and disappointment make them occasionally a little *irritable* also in temper, for when any of them make application to me, I commonly ask “what has been done for this sore?” and the usual answer is given

in a very peevish tone, "O! Sir, I've tried everything."

The difficulty of curing an ulcer is not in proportion to its magnitude, for under proper treatment it is astonishing with what rapidity the largest of them will, in general, fill up and cicatrize.

The description of sore which proves most troublesome does not exceed a shilling in circumference, but it is most frequently embedded in a congeries of enlarged veins, either just below and in front of the external ankles, or on the inner or outer side of the calf of the leg, where the branches of the veins most abundantly congregate and intermingle with the superficial lymphatic vessels.

"Remove the cause and the effect will cease" is an axiom "somewhat musty" but quite applicable in the treatment of both the kinds of ulcers just described. The impaired functions of the veins, and the diseased condition of the superficial structures, exercise the most material influence on the characters of such sores; our primary attention should, therefore, be directed to counteract that influence by restoring those parts to their normal condition,—and as we succeed in that object, we shall find a corresponding improvement in the ulcerated surface.

ON THE CLASSIFICATION OF ULCERS OF THE LEGS.

In the preceding chapter, some of the local circumstances that most frequently produce ulcers of the legs, have been chiefly considered; but constitutional causes may also occasion the formation of ulcerous affections, or modify them, when once produced, in a variety of ways, agreeably to the original temperament of the individual; or, in accordance with the peculiarities of any acquired disease that may exist at the same time in the system.

The lower extremities, for the reasons already given, being more susceptible of ulceration than the other parts of the surface of the body, are, in consequence, frequently attacked and influenced by the above causes; just as the glands are assailed when the habit is scrofulous; and the lungs in persons of a consumptive diathesis. Among the constitutional causes that vary the external character of ulcers, and occasionally produce them without any, or from very slight,

local violence, may be enumerated disorders of the digestive organs, nervous irritability, the climacteric period of life, intemperance, or any circumstances that will occasion a material derangement of the general health; or, they may receive their peculiar characteristic appearances from one or other of the specific diseases.

The classification of ulcers of the legs is, undoubtedly, of great practical importance, but in attempting it, surgical writers on the subject have chiefly grounded their arrangements on very questionable pathological theories; on ulcers which yield to this or to that medicament; or on their external aspects merely—a very fallacious principle, because their superficial appearances are as infinitely varied as the shades and combinations of colours, and consequently no definite plan of cure can be founded in them. The local character, however, of ulcers is not to be disregarded, although it is taking too limited a view of the nature of such affections to attempt to form a systematic arrangement on the outward appearances alone, that they present; and it is very probable that this error has been the cause, in a great degree, of the uncertain and inefficient mode of treatment of them that generally prevails.

A classification of ulcers should, as far as possible, be founded on the structures which they

pervade, the characters they manifest, the causes, whether constitutional or local, which produce them, or which prevent their healing; considerations that would at the same time indicate, in a great degree, the course of treatment required for their cure.

And although it might be difficult to frame an arrangement that would be without fault, I shall venture to suggest the following, which is, perhaps, sufficient for practical purposes; and being founded on the causes which produce those diseases, or which operate chiefly in their maintenance, is, at least, free from the common objections so justly raised against those classifications which are based almost entirely on their external manifestations, or on the assumption of untenable hypotheses.

The following general division of the subject probably embraces most of the varieties of ulcers that commonly occur on the legs, which have either a local, constitutional, or specific origin.

CLASSIFICATION.

1. SIMPLE ULCERS—such as are occasioned by accidental injury to structures previously healthy; and which may be either of recent formation or of long existence.

2. VARICOSE ULCERS—dependant on enlargement of the veins for their production or continuance.

3. INTEGUMENTARY ULCERS—dependant on, or combined with, a diseased state of the skin and the subjacent tissue, and accompanied by various degrees and kinds of inflammation, as the phlegmonous, erysipelalous, &c.

4. CONSTITUTIONAL ULCERS—dependant on organic derangements of the system or other disturbing cause of the general health; or on habits too plethoric and gross, or too spare and debilitated.

5. SPECIFIC ULCERS—possessing local characteristics in accordance with the nature of the disease from which they arise,—as scrofula; the venereal disease; cancer; phagedæna; and any other that has its own peculiar symptoms.

6. MIXED ULCERS—dependant on the combined operation of local and constitutional causes for their origin or continuance.

Daily experience, however, teaches us that ulcers of the legs are not always so isolated in their nature as to belong exclusively to any one of the divisions of this, or any other classification that could be framed; we therefore find that the characteristics of two or more of them are often combined in the same sore. Thus the essential local symptoms on which the second and third divisions are founded in the preceding arrangement, may be blended in various degrees with each other, or either or both of them, with the specific diseases, or with constitutional disturbance. The circumstances, which induce ulcers being so numerous, we are not surprised at the great diversity we meet with in their local manifestations; and it is by a careful investigation only into the history of each case, that will enable us to determine the proper place in the arrangement for each ulcer, and thus obtain for us an index to the cure.

It is the consideration of the leading causes of the disease, whether constitutional, local, or specific, that must constitute the foundation of our treatment, not the mere external appearance of the ulcerated surface, which can convey to the mind but a very imperfect clue to the intrinsic nature of the malady; and by directing our remedies to their removal, we are to expect the most favourable results in practice.

ON THE CURE OF ULCERS ON THE LEGS.

The local management to be observed in the cure of an ulcer is of equal importance with the constitutional, but it does not require so much modification—simplicity and efficacy should constitute its chief attributes—both which, it is presumed, may be fairly awarded to that plan which is recommended in this Essay.

Before commencing the treatment of ulcers on the legs, the following circumstances should be considered:—first, the condition of the integuments, and also of the venous structure of the limb; and secondly, the history and character of the sore; in order to ascertain whether any one of the specific diseases exist in the constitution to give a peculiarity to the local affection; or, if there be any other disorder of the general health that may operate disadvantageously on the ulcer. The first of the above considerations will be presently spoken of; whilst of the latter it may be only necessary in this place to observe, that any one of those deviations from health must be overcome by the administration of its appropriate

remedies, which necessarily require to be varied to suit the peculiarities of each case, and consequently cannot come within the limits of this work to discuss. But as, in general, ulcerous diseases of the extremities, whether complicated or not with constitutional derangements or specific diseases, seldom require much modification in their *local* management; I shall briefly relate the general plan of topical treatment I have pursued for many years in almost every variety of them, and with the greatest success.

It consists chiefly in the application of gentle and equal pressure to the whole cavity of the ulcer, assisted by simple dressings without any kind of greasy ingredient; and firm support of the affected leg by means of a bandage applied from the toes to the knee, in the manner hereafter described.

These measures, simple as they appear, will, when efficiently employed, soon change the character of the most formidable looking, obstinate, and intractable ulcers; and after the first or second dressing, will improve the nature of the discharges, lessen the offensive odour, and quite subdue the pain; and by a little perseverance effect a permanent cure; either alone, when the disease is purely a local affection, or when otherwise, combined with suitable constitutional treatment.

However foul the aspect of the sore may be, gentle pressure continued in its cavity will produce the changes before-mentioned, by causing it to generate a crop of healthy granulations from its whole disk, which will be found to augment after each successive dressing; whilst at the same time the bandage presses down the edges of the ulcer to meet them; and in this manner the deepest wounds are quickly made to fill up to the level of the surrounding surface, when the formation of the new skin commences from its circumference. Sometimes, however, this latter process is interfered with, in consequence of the granulations in the ulcer being exuberant and rising above the level of the cutaneous surface; firm pressure, in such instances, is equally advantageous, by condensing and gently forcing the newly-formed parts into a line with the old skin; after which the healing process is soon accomplished.

To fulfil the first of the above intentions, viz:—the application of pressure to the *cavity* of the sore, I have employed various substances. Sponge tent cut to the size of the wound and secured in it by a bandage, firmly applied, answers very well; for as soon as the sponge becomes distended by the absorption of moisture from the part to which it is applied, it insinuates itself into every minute recess in the cavity of the ulcer, and soon effects the revolution in its granulating surface above-mentioned.

Charpie answers the same purpose; and although the first layer of it may absorb some of the purulent discharge from the sore, I have never found that any harm was done by it, notwithstanding the universal anxiety of surgeons to coddle the granulating surface with that secretion.

Sometimes a sort of *dough* may be employed, composed of equal parts of prepared chalk and flour, mixed with a sufficient quantity of water to give it the requisite consistence; the ulcer is then filled with the mass so formed, and when hardened by the evaporation of the water used in the blending, it is sufficiently stimulating, when pressed upon by a bandage, to cause the ulcer to send forth those small florid granulations which indicate a healthy condition, and which are essentially necessary for the reparation of the breach in the corporeal substance.

This change in the granulating surface of ulcers is probably occasioned by the mechanical stimulation of the substances employed inducing greater activity in the minute arteries of the part to which they are applied, and consequently rendering the granulations more prolific, stronger, and more healthy; and those mechanical agents appear to act with more certainty and conspicuity in producing these effects; not only in the torpid and weak descriptions of ulcer, but in many others, than any other topical applications I have

employed. Indeed, the rapidity and constancy with which this treatment operates in superseding various morbid, and introducing healthy conditions in several varieties of ulcers, is often very surprising.

When, by the continuance of these measures, sufficient time has been allowed for the excavation to be filled to the level of its circumference, by the gradual accumulation of this growth of florid granulations; a simple dressing, to cover and protect the surface, is all that is then required; whilst the continuance of the general support to the limb, favors the other natural reparative processes that are made to complete the cure by the formation of the new skin.

Many of the ulcers that are constantly coming before us, situated not only on the legs, but in the groin, the neck, and other parts, receive equal benefit by similar treatment. This is particularly the case where the capillary vessels are unusually languid, and the granulations in the wounds are large, pale, and flabby. Scrofulous ulceration is an example in point, and this is the description of sore which SIR EVERARD HOME states "may be cured by *sea water*;" and so it may sometimes, and by *sea air* also, aided by the local means just described; and had that writer substituted the latter phrase for the former, he might have included a much larger number of

ulcers that derive benefit from a residence on the sea coast, through the improvement of the general health, than by the mere application of salt water to a sore surface.

When ulcers possessing these characteristics are presented to my notice, I usually fill the excavations with one of the substances, and in the manner already mentioned, and then surround the limb or other parts with a calico bandage, and after a few such applications, the appearance of the sores is completely metamorphosed. This treatment is more successful than any other in giving a tone to the granulations, in promoting their numerical growth, and amending their character; and as such sores are usually accompanied by general debility, we should assist those topical applications by every means that will invigorate the constitution; as by suitable regimen, tonic medicines, sea air, and moderate exercise.

The application of well-adjusted compression to ulcers of an irritable character (integumentary,) lessens the increased morbid sensibility as effectually as caustic applications, and patients, who have had both plans tried, say more agreeably. As the morbid sensibility abates, a check is given to the unhealthy ulcerative processes that are going on in the sore, which are soon converted by this treatment into those which produce healthy granulations. When an

ulcer is situated in a part where compression can be conveniently applied, it may be made to supersede all caustic applications; but when that is not the case, we must destroy the diseased irritability prevalent in the part affected, by escharotics and other remedies of the most approved efficacy.

But in general, the modification in the treatment that each variety of sore may require, is to be effected through the constitution by medicines that will correct disordered health, or subdue disease; the more simple the local treatment is the better; and although the agents for the latter proceeding recommended in this essay are but few, they are generally sufficient in practised hands,—they supersede a host of common, and frequently very painful, applications; and are neither debilitating like mis-used poultices, nor irritating and injurious to the diseased parts like greasy ointments; which, if not tainted when applied, are soon rendered ranced and galling by the high temperature of the limb.

When an ulcer is complicated with varicose veins, which it is in an immense proportion of cases, well-regulated compression of the whole limb induces also a more natural circulation in those vessels; and, at the same time, by reducing their calibre to its normal dimensions, improves the condition of the surrounding tissues, by the removal of the cause of the irritation occasioned

in them, by the irregular mechanical pressure of the congested and enlarged veins.

In the same degree that we succeed in restoring the natural functions of the overcharged and dilated vessels, will be the improvement in the condition of the circumjacent structures, and the amelioration of the sufferings of the patient; and after a little perseverance the most refractory and painful sores are brought by these means into a state of complete and comfortable subjection. The advantages resulting from compression, as just intimated, are not confined to the venous system, or to the ulcerated surface; but when any adventitious deposits are present in the limb; when it is tumefied; or the integuments are hardened as well as increased in bulk; compression acts very beneficially in reducing such conditions to a natural state, whether they are of recent or protracted existence, by giving greater activity to the absorbent vessels, and by the general improvement it produces in the various structures of the limb.

It is the unhealthy condition of the skin and the subjacent structures, that renders so many ulcers of the legs difficult to cure; and all the multitudinous applications that have been at various times recommended, may be applied to them with little or no improvement, if this state of the limb does not receive primary attention and suitable treatment.

Compression, therefore, is a measure of paramount practical importance in the treatment of all descriptions of ulcers of the legs, dependant on or connected with varicose veins; because it suspends, for the time it is employed, the operation of the most prevalent, exciting, and perpetuating cause of such diseases, and it is the only means that I am acquainted with of keeping the limb free from venous engorgement during the healing of ulcers; except the inconvenient one of placing the patient's limb on an inclined plane raised somewhat above the resting place of the body. Besides the personal inconvenience this position occasions, it necessarily precludes the recourse to daily exercise during the cure, which I consider an important adjuvant in almost all cases of ulcerous diseases of the lower extremities.

Mr. B. BELL, who wrote at great length on the subject of ulcers, in the year 1799, has the following passage in his work, which so fully corroborates all that has been advanced in this paper on the value of compression, that I shall not resist the temptation of introducing it in this place:—"We have taken various opportunities in the course of this work, to recommend the application of pressure in the cure of ulcers. In addition to what has already been said upon this point, we think it necessary to observe that this remedy is not as yet sufficiently known, otherwise it would be more generally employed.

Those who have not used it would scarcely give credit to the accounts we could give of its *universal utility*, in the cure of sores: but from much experience of its effects, in almost every species of sore, we can venture to assert that those who have not employed it, have deprived their patients of the most powerful application which has hitherto been invented for the cure of ulcers.”

It is highly important during the progress of the cure of ulcers, more especially of those of large magnitude, so to adjust the compression as to approximate the opposite edges of the wound that the cicatrix, or scar, which remains after the healing is completed, may be as small as possible. The more of the old skin we can by that means press, without causing irritation, from the circumference towards the centre of the wound, the less occasion there will be for the formation of new skin; which is never quite so substantial and well organized as the primitive production; and consequently not so firmly to be relied on as a protection against a recurrence of the disease.

Thus, then, by means of this simple but most valuable agent—compression, we assist nature in the reparation of an ulcer in three direct ways; by inducing a growth of granulations from the bottom of the wound; by pressing the edges of it down to meet them; and

by diminishing its area in healing;—besides rendering the discharges healthy; improving their appearance; subduing pain; and in several other ways contributing to a speedy and permanent cure. What “medicinal gum” in the whole range of our therapeutic vocabulary will effect so much, and accomplish it so well?

Gentle exercise exerts an essential influence in promoting a free circulation of the blood throughout the body, and in the proper performance of the various functions of the other systems of vessels, in order that the whole may harmonize, and health be the result. This admitted truth applies with peculiar force to the lower extremities, in which so many circumstances concur to impede the due progress of the blood, and consequently to interrupt the healthy actions of the absorbent system, and the capillary arteries and veins. It holds equally true when the extremities are ulcerated; the common injunction, therefore, of keeping patients in bed or on a sofa during the cure of ulcers, especially those of a chronic kind, is, to say the least of it, an unnecessary restraint, and operates as an impediment to the reparation of such affections in a majority of the instances under consideration.

Moderate exercise imparts that vigour to the local circulation and to the absorbent system,

which is necessary to the reparative processes of ulcers, and assists the other measures just spoken of in changing the general condition of the limb from disease to health.

In those cases of ulcers which are accompanied by an inflammatory condition of the limb; by great pain, heat, general swelling, and considerable turgescence of the vessels; rest, and placing the limb in a horizontal position, or, what is much better, with the foot considerably elevated to assist the progress of the blood; are, doubtless of important service in relieving those symptoms; and, admitting this, is rendering as much commendation to position and confinement as they are entitled to. But in the old indolent affections, all the good that could result from those measures may be much better obtained by other means; and in order to cure ulcers of this description quickly and permanently, as well as the more complicated of those disorders, we should have recourse to agents of greater positive efficacy, viz:—compression and general support.

With the aid of these measures, exercise may be safely and advantageously enjoined, and the good effects of their combined operation soon become apparent; but without the employment of those valuable auxiliaries, many months are often passed by persons in a rigid state of confinement,

the diseased leg being generally soaked the greater part of the time in a poultice, with little or no improvement in the local disorder; but frequently exhibiting a very marked deterioration of the bodily health.

But in almost every case of ulcer of the leg, the usual declaration of the medical attendant to the patient is,—“ You can do nothing without rest.” My experience, however, has brought me to the conclusion that, with very few exceptions, much good may be done without it; and that the cure can be even greatly promoted in a large proportion of them, by an opposite course of proceeding.

During the cure of ulcers, therefore, more than ordinary rest may be considered unnecessary; whilst constant confinement is often injurious both to the general health and the local disorder. The exceptions to this remark on the advantages of exercise, are cases attended with active inflammation, as erysipelas, phlegmon, &c. where perfect repose forms an essential part of the treatment, until the inflammation is subdued; but the recommendation of it should be limited to cases of this description, and to the duration of the inflammatory action.

Well-adjusted compression is the great substitute for rest, in relieving pain and vas-

cular distention, in a great variety of ulcers on the legs; and is more than equivalent to it in value as a remedial measure in many other respects. Exercise without such support is, no doubt, injurious and painful in some ulcerous diseases, more particularly when the adjacent fabrics are disordered; but when those morbid structures and the vessels are properly sustained by a well-applied bandage, gentle exercise is an accessory that proves very conducive to the cure, especially in indolent old ulcers.

Experience also evinces to us, that ulcers that happen to be healed whilst the patient is kept in a state of confinement, are very apt to form again when he resumes his avocations and exercise; the new granulations that are engendered to fill up the cavity of the ulcer during this tardy process of healing in bed, are flabby, feeble, and overgrown; they are not florid, vigorous, and condensed, as is the case when the ulcer is filled with those vital materials during a state of exercise, and with the assistance of compression; and consequently are not so calculated to remain permanently sound. Indeed, they may altogether disappear in a very short time under any considerable constitutional disturbance or local irritation. That the long-continued deprivation of exercise tends greatly to impair the general health no one will deny; and that in its secondary effects it exerts an unfavourable influence on local diseases, is equally obvious.

Why, then, are persons affected with ulcers on the legs to be confined to their homes, to their prejudice in this double sense, when they may be so safely and advantageously allowed to pursue an opposite course? Many answers to this question suggest themselves; but, perhaps, it will be well in this instance to follow the advice of that author, who recommends that “writers should always leave something for the imagination of their readers to supply.”

It is really distressing sometimes to hear the lamentations of those sufferers whose time has been thus wasted in long confinement; and who have been assured week after week that “the sore is looking better,” till they at last become absolutely sickened with “hope deferred.”

Many other persons also complain, often after a very protracted trial of their patience, that they *cannot afford* to submit to such nugatory practice,—the loss of time and occupation being of serious inconvenience to themselves and families; but being impressed with the idea, too often derived from their medical attendant, that the disease is incurable without perfect rest; they neglect themselves rather than their avocations, and go about with a painful and noisome ulcer, which might be speedily healed by more rational and energetic measures. And to persons not dependant on their own exertions

for support, a varicose ulcer managed—or rather mismanaged—on the common plan, often proves as enduring, and as expensive also, as a suit in Chancery.

Another of the practical errors in the treatment of ulcers, is the constant and almost universal recommendation of *poultices* by the profession; this must result merely from the force of habit,—it cannot be from observing that any general benefit is derived from such indiscriminate employment of them, because daily experience proves the contrary. In some few cases, they doubtless afford temporary alleviation of suffering; for instance, in those which arise from recent injury and are attended with inflammation; but their continued employment month after month to ulcers of every type, is not only useless, but prejudicial to the part affected—without taking into consideration that such practice prevents the application of really effective remedies.

In all ulcers dependant on local debility, or on an enfeebled state of the constitution, the use of a poultice increases the weakness of the part, and is the very thing to protract and not to promote their cure.

Amongst the numerous sores included in the classification in the preceding part of this work, I

observe but two descriptions of them that would derive positive benefit from even the temporary application of the poultice, whilst to all the rest that are comprehended in that epitome, to speak with moderation, it would prove only a passive, if not an injurious agent.

Whilst the management of almost every surgical disease has undergone improvement during the last quarter of a century, that of sore legs does not appear to have kept pace with the onward course of science; and although in "well-informed circles" of the profession, the principles of treating them may be understood, the practice pursued, so far as my opportunities of judging have extended, is deplorably at fault; and it is questionable whether it is not, even at the present time, much in the same state it was in the infancy of the medical art. And although BAYNTON, WHATELY, B. BELL, and UNDERWOOD, more than forty years ago wrote, in many respects, judicious essays, advocating various improvements; still, in routine practice, ointments, lotions, rest, and cataplasms, continue the order of the day in every variety of ulcer; and in general those common-place recommendations seem to constitute the "*ne plus ultra*" of surgical appliances.

ON THE USE AND APPLICATION OF BANDAGES.

The purposes for which a bandage is applied in the treatment of sores on the legs, are to preserve dressings in their proper situations; to compress enlarged veins; to reduce œdema and chronic thickening of the integuments, by its pressure, which gives a stimulus to the absorbent vessels; and to afford equal and general support to the limb.

In order to fulfil these various intentions, much expertness is required on the part of the surgeon; a bandage being of most essential assistance in promoting the cure of such diseases when well applied; but when otherwise, proving a source of injury to the part affected, and of suffering to the patient.

The dexterity necessary to render the application of a bandage efficient, can only be acquired by experience and frequent practice. In applying it to an ulcerated leg, the object is to give the limb firm and, in general, equal support from the toes to the knee. If it be too

loosely applied, it will not fulfil this intention, and consequently will be useless; on the contrary, if it be too tightly bound, especially on the upper part of the leg, instead of being a most comfortable application, it will occasion, even to a healthy limb, much pain, swelling, and inflammation, and such an interruption to the circulation of the blood, as to produce venous turgescence of the foot and the lower part of the leg. How much more likely, then, is it, when ill applied, to prove an additional source of suffering and injury where these states already exist?

The method I adopt in applying bandages to the lower extremities is—to put the heel of the leg to be bound on the edge of a table, about a foot higher than the cushion of the chair on which the patient is seated, in which situation it remains for two or three minutes before the rolling commences, and until that process is finished. The intention of placing the limb in this elevated and inclined position is—to empty the veins of the blood they contain, whether preternaturally full, or only circulating a proper quantity; which being accomplished, the individual can bear a much greater degree of pressure from the bandage, than when it is applied to the limb in any other posture; and when the upright position is resumed, the super-

ficial veins in the leg bound evenly and firmly while so placed, cannot become unequally or much distended; and consequently the person is enabled to walk about during the cure of almost every variety of ulcer, with the most perfect freedom from pain.

By this proceeding also, we get complete control over the limb, and can so nicely adjust the compression, both in the cavity of the sore and around the leg, as to give the exact degree of force that may be thought requisite to rouse the dormant energies of indolent ulcers; and to amend or check the morbid actions of others, sufficiently to carry on and perfect the reparative processes.

Whether the disease be complicated or not with affections of some of the other component parts of the limb, we should pursue the same plan, by which we gain all the advantages of firm support, without the same risk of causing pain by unequal pressure that we incur by the common methods of making the application.

A similar position of the limb should be observed when the wound is filled with either of the substances I employ for that purpose, because the capillary veins in the cavity of the ulcer are usually congested, and even varicose from the same causes that produce those effects in the

larger vessels, and because they have lost the natural support which the skin afforded them before the ulcer formed. The congestion of the capillary tubes in the ulcer will be evident by examining it when the limb is in a dependent and when in an elevated position; in the former, the capillaries are turgid and purple; and in the latter, the surface of the sore is much paler from the collapsed state of those delicate vessels.

Moderate pressure in the cavities of ulcers supplies this loss of natural support, which the network of minute vessels that lines these excavations has sustained from the destruction of their natural covering; and, by relieving congestion in them, and causing a more natural circulation; produces great part of the benefit that so manifestly results from the practice.

Sometimes it is requisite to increase the degree of compression that is commonly required, in order to press together the opposite sides of the superficial and enlarged veins of the leg, and thereby keep them empty during the healing of the more intractable sores; and this can be done most advantageously and effectually, by applying the bandage when the limb is in the position just described. Excluding the blood thus from the dilated veins on the surface, and forcing it to circulate through the collateral branches and the deep seated vessels, always

affords relief to the patient, and is of immense advantage in promoting the cure of the more formidable description of ulcers connected with the varicose affection.

So important, indeed, is compression as a curative measure, that it may be stated that a vast number of the sores which occur on the lower extremities, require little more for their local treatment than simple dressings, gentle pressure on the face of the ulcer, and the general support of the limb produced by a properly adjusted bandage.

Much of the pain that arises from an unskilful application of a bandage, is attributable to the circumstance of its making unequal or too great pressure on the veins, especially on the upper part of the leg, which it is very difficult to avoid, if the attempt to apply it be made when the limb is in a dependent, or even a horizontal position, and the veins consequently charged with blood to repletion. The bandage then acts like a lock in obstructing the vital stream, which is a very different thing from its scientific application, to divert the current of blood into other channels during the cure of ulcers, accompanied with over-distention or enlargement of the veins. The blood being interrupted in its course by that malpractice, is made to press forcibly against the valves of

those vessels, whose office it is to resist its retrograde course; and that fluid being forced in a direction contrary to which it circulates, causes considerable suffering by the strain it occasions on these delicate barriers.

It is the bungling application of the roller that has tended to bring that valuable agent into occasional disrepute; and nothing is more common, when bandaging is proposed, to have it objected at first by the patient, who says "a bandage has been applied, but it made the leg so painful I was obliged to take it off."

Persons twist a roller round the limb and leave one edge of it floating, and press the other into the flesh so firmly as to cause a deep furrow, and sometimes a blister is to be seen when it is removed, and then fancy they have applied a bandage; which, when properly done, ought to have every part of it so accurately adapted to the leg, as to present scarcely any greater inequalities than a well-fitting silk stocking, and to retain its situation, if required, without slackening in any part, for several days.

Surgeons in general are either not sufficiently aware of the value and importance of pressure, or do not take the pains to make themselves adepts in the application of it, and consequently do not employ it efficiently in practice, or to the

extent to which its merits entitle it. Hence we may trace the opinion that some surgeons, even of great chirurgical erudition, entertain that "no benefit is derived from compression in several species, even of indolent ulcers, but that many of them are rendered more painful and more unhealthy in their appearances by its use:" facts, probably, which the awkward manipulations of many practitioners have contributed but too well to substantiate; but which are explicable, not on the ground of the inadequacy or the occasional mischievous tendency of the remedy, but on the partial constriction of the limb, and the interruption of the circulation produced by the unskilful employment of the bandage.

If the opinion expressed by the writers above alluded to, were not in direct opposition to my own experience, I ought, probably, to beg pardon for making so bold a remark; but, perhaps, those gentlemen in under-rating this remedy, founded their opinions on theory only, or on the results of the common methods of employing it, and had but little practical knowledge of the *proper* application of compression; and, perhaps, none at all of its application to the cavities of ulcers; or to the limb when drained of its superabundance of blood by position.

Every remedy we possess is liable to similar

objections to those just mentioned against compression, and which may be inert or prove injurious in precisely the same disorder, accordingly as it is well or ill-timed, and to the extent, skill, and judgment with which it is employed.

Another very important advantage arising from the application of the bandage, when the limb is on an inclined plane, is—that from the very commencement of the treatment, the patient can take his usual daily exercise without either suffering or inconvenience; and which exercise so far from retarding the cure, promotes it; especially in indolent old ulcers, accompanied with an indurated and thickened condition of the integuments.

An enlarged state of the veins is frequently the chief impediment to the healing of ulcers on the legs; but when the difficulty is overcome, the cure, without proper precautions, is not always permanent.

The unsupported or imperfectly-sustained column of blood in the dilated vena saphena, and its numerous branches, produces by undue pressure a constant tendency to fresh ulceration, which is augmented by the individual being obliged to keep much in the upright position. This tendency to the reproduction of disease in the limb, is to be counteracted by the employ-

ment of methodical compression after the ulcer has healed; which must be permanent during the day at least, to render the person secure from such a recurrence.

The varicose condition of the veins, which has rendered many ulcers of the legs so difficult to heal by any of the ordinary methods of treatment, has led some surgeons to propose tying the trunk and larger branches of those vessels, both to expedite the cure and prevent the return of such diseases; and although in a few cases the practice has been attended with success, it has very often failed; and has been besides productive, in some instances, of very serious mischief: and after considering the subject in all its bearings, I am of opinion it is a surgical proceeding that is much better avoided.

Operations are always objectionable when the good that may result from them, can be attained by other means; and so far as my experience has extended, the most obstinate varicose ulcers can be cured without such objectionable agency; and their return prevented by efficient and permanent support to the member afterwards.

I am happy to find that the opinion just expressed on the application of ligatures to the veins, is supported by the writings of three, at

least, of the most eminent surgeons of modern days,—SIR ASTLEY COOPER, SIR BENJ. BRODIE, and Mr. LISTON.

From the foregoing remarks, it must be obvious that the advantages resulting from the employment of a well-adjusted bandage are manifold:—in counteracting the ill effects of the *engorgement* of the venous system when the limb is in a dependent position; in improving the general condition of its various structures when diseased; in reducing the dimensions of ulcers, and meliorating their local character, and thereby assisting their progress in healing; in diminishing pain; and in preventing the recurrence of disease after the cure is accomplished.

As no person can apply a bandage properly to his own leg, on account of the venous congestion occasioned in it by the constrained position he is obliged to assume in making the attempt, I commonly instruct one of the family of the patient, when cured, in the art of applying it; and recommend the individual to practise on a sound leg till some adroitness is attained; so that the necessity of having recourse to professional assistance afterwards is obviated. In furtherance of that custom, I have committed to paper the following brief instructions for the application of a roller:

A strip of good calico, about two inches in breadth and six or eight yards in length, without either join or selvage, is perhaps the best bandage, out of many that have been devised, to fulfil the various intentions for which it is employed in the diseases under consideration. This band of calico is firmly rolled up and then applied smoothly and spirally round the limb, so as to afford equable support to it; or, when requisite, to make additional compression on any particular part; as in those situations where the venous enlargement is most conspicuous. When this additional compression is necessary, it should be made not with the lower or upper edge, but with the entire breadth of the roller applied flatly to the varix.

Before the bandaging commences, the leg should rest for a short time in an elevated position, above the seat of the chair in which the patient is placed, and remain there till the process is finished; and the same position should be observed and maintained when the leg is invested with a laced stocking, and for the like reason, viz: to unload the venous system.

The roller is first passed twice or thrice round the foot, then over the instep and backwards, round the bend of the heel, then again over the instep, and under the sole of the foot.

It is afterwards to be wound gradually up the leg to the knee, each circle of the roller overlapping by rather more than one-third of its breadth, that which last preceded it. After it has made two or three revolutions above the ankle bones, it will be requisite to reflect the upper edge of the roller obliquely downwards after every circular turn, so as to prevent bagging, which proceeding is rendered necessary by the varying dimensions of the limb.

INFLAMED AND IRRITABLE STATE OF
THE INTEGUMENTS WITH EXTEN-
SIVE SCABIES.

This is a disorder of the skin of the lower extremities frequently met with, which though not attended by ulcers of any great magnitude, is frequently accompanied by a great number of very minute ones dispersed about the limb. It is an affection that proves quite as tormenting as any ulcer of the most formidable aspect, and resists with great pertinacity the application of almost every kind of remedy. The disease is common to both sexes, is attended with a considerable eruption, and appears to arise from the irritation occasioned by a general varicose condition of the veins and a diseased state of the contiguous structures; an attention to the removal of which forms the chief element in the cure.

The two following cases will perhaps convey a better idea of the malady than an abstract description :

CASE 1.

Mrs. W. aged 34 years, consulted me on the 22nd November respecting her leg, which she said had been bad eight months, during the greater part of which time she had been in daily attendance at the surgery of a medical man without deriving the least benefit. It presented the following appearance:—innumerable flakes of a brown incrustation or scab extended from the bend of the heel for more than a foot up the calf of the leg, then advanced forwards and covered the skin all round, except a small portion on the shin bone. These brown flakes, on being only slightly touched, would slide over the others next them, like the scales of a large fish that is being scraped for cooking; leaving the surface beneath them red, moist, and raw. On bathing the part in warm water, they might all be cleared off, but in the course of an hour or two there would be another collection of them. The leg was swollen, and on the calf the veins were enlarged; one of them so considerably, as to convey to the finger an impression as if pressing on a ripe medlar. It was around this tumid vein that the irritation first commenced, and induced her to scratch the skin till it became sore, and to repeat the operation very frequently until the disease attained, in eight months, the above extent. The itching extended over the large surface just

described, and increased at night when warm in bed, so that the patient had to endure that intolerable annoyance, or put up with the pain which scratching occasioned, and which produced blood wherever her nails were applied. She was frequently obliged to quit her bed in the night and put the leg into hot water, to obtain even temporary relief.

TREATMENT.

An alterative medicine was prescribed ; the diseased surface covered with a soothing liniment, and a bandage applied from the instep to the knee.

Nov. 25th. The patient had experienced considerable relief from the itching, and the tumefaction of the leg had diminished : the treatment was repeated.

Nov. 30th. The irritation had wholly subsided after the second dressing ; the flakes were not so brown, were smaller, and more adherent to the skin.

Dec. 4th. The skin is approaching nearer to its natural appearance ; the excretion from the surface which by partial evaporation, no doubt, caused the incrustation, is not now perceptible.

The treatment was continued till the end of December, when complete recovery had taken place.

CASE 2.

On September 6th, 1841, I was consulted by Mrs. A. a lady about 45 years of age; she was formed on a large scale of beauty, and weighed nearly 15 stone. She was destined to lead an active life, but for the last two years had suffered so much from a troublesome eruption on the leg, closely resembling that first described, that she was unable to move about the house without experiencing great pain; and at night her sufferings were not much meliorated, but were always so great as to prevent her having one hour's sound sleep. On examining the leg I found it, although of very ample natural dimensions, considerably swollen, and surrounded, nearly from the ankle to the knee, by a brown incrustation; on raising any portion of which, the skin beneath was as red as raw beef. The veins in several places were much enlarged, and had on two occasions when she was in the family-way, burst and discharged a considerable quantity of blood. Her general health was good, and her constitution had undergone those important changes incidental to her period of life. I therefore prescribed only a mild alterative course of medicine; applied a soothing liniment to the leg, and supported it by a circular bandage. As the lady resided twelve miles from my house, it was not convenient for her to see me again before the 15th. On that day she

again paid me a visit, and stated that in about three hours after the first dressing, her leg became easy, and on that night, for the first time for many months, she had enjoyed undisturbed repose. The medicines and application were repeated; and on the third visit the patient informed me, that she had been the day previously, for sixteen hours out of the twenty-four, on her feet assisting her husband in his vocation, without feeling the least inconvenience. After this I dressed the leg four times, at intervals of from ten days to a fortnight, and then finding that the swelling of the limb had subsided, that the skin had regained its natural appearance, and was entirely free from irritation; I recommended an elastic stocking to be worn constantly, to support the veins and prevent a relapse. Eight months have since passed away without the patient experiencing the slightest return of the disorder.

ON SLOUGHING PHAGEDÆNA.

This infectious disease is of much less frequent occurrence among the depraved and dissipated in country towns, than it is in the same class of persons in the metropolis. Both sexes are subject to it; but it occurs most frequently to females between the ages of sixteen and thirty years, of the lowest description, who over-run the most wretched parts of the suburbs of London and Southwark, and seek a miserable and precarious subsistence at all hours of the night, and in all states of the weather. Scantily clothed and meagerly fed, these women, partly to supply the place of the above wants, swallow large quantities of the various liquid poisons supplied by the "gin palaces," till sooner or later they are prostrated by disease, or a premature death terminates their misery.

These habits of life beget the predisposition to disease, so that when this contagion is applied, even to a small ulcer, or a slight excoriation, its nature is to extend its destructive ravages in every direction, and to implicate all the structures of the body in contiguity with it;

and sometimes even to destroy life, unless arrested by very decisive measures.

Although the precise origin of the contagion that produces sloughing phagedæna, cannot be ascertained, there is no doubt but want of cleanliness, debauchery, alternate want, and intemperance, have great influence in its production, and materially contribute to the often frightful progress it makes on its supervention.

The following cases will illustrate most of the characteristics of this infectious disorder:

CASE 1.

A female, aged 24, was admitted into one of the venereal wards of St. Bartholomew's Hospital, with a sore on the upper and back part of the right thigh; it was nearly circular in form; had spread to a considerable extent, and was nearly an inch in depth. It had a brown, pulpy, and fetid slough adhering firmly to it, and the pain was so great as to keep the patient constantly in tears. The sore had attained its present considerable dimensions in the course of little more than a fortnight, and was extending in every direction. She was extremely restless, had a dry hot skin, a brown fur on the tongue, and the pulse was above a hundred in a minute.

That plan of treatment was adopted which was then usual at the Hospital, and which was found more effectual than any other in arresting the progress, which is in general extremely rapid, of this destructive disease. It consisted in anointing the sound parts around the sore with spermaceti ointment, as a protection merely from the remedy which was to be applied to the sore itself, namely, the strong nitric acid. The patient being placed so as to bring the sore on a horizontal level, that the acid might not by accident trickle over the sound skin, I applied the undiluted nitric acid to the whole of the cavity, and till the slough became saturated with it, by means of a small piece of sponge fastened to the end of a probe. The ulcer was then covered with dry lint, to absorb any acid moisture that might escape from it; and after some time a poultice. The application of the acid occasioned intense pain, but it was of short duration, for some laudanum being given in a glass of wine, the patient soon fell into a sound sleep and awoke after some hours perfectly easy, with a quieter pulse and a more happy countenance. In the course of a few days a thick putrid looking, fetid, and pulpy mass of flesh began to separate from the surrounding healthy parts, which in a few days more became completely detached from the whole surface of the ulcer, leaving it clean granulating, and of a vermilion tint, but of such capacity that it would have received into its

cavity, the whole convex part of a china tea saucer. From this period the cure was progressive, and in six weeks completed; by means of mild applications to the sore, assisted by the pressure of a bandage; and by the administration of such medicines as the constitutional indications required.

In one year I witnessed sixteen of these distressing cases in St. Bartholomew's Hospital, thirteen of which recovered by treatment similar to the above; one application of the acid being sufficient in each instance to arrest the progress of the disease; the other three sunk under the affliction, being at the time more advanced in life than the individual above-mentioned; having more impaired constitutions; or from the disease having spread to a much greater extent before their admission into the Hospital.

It is mentioned above that sloughing phagedæna is of comparatively rare occurrence in the country, and in confirmation of that remark, it may be stated that during the two years I held the office of Surgeon to the Guardians of the poor of Southampton, my duties necessarily brought me acquainted with most of the scenes of wretchedness and disease that occurred in the town in the course of that time: I can recall to mind only four cases of the disorder; and these differed in one respect from those which occurred

in St. Bartholomew's Hospital, viz: I was enabled to cure them all without having recourse to so severe an agent as the nitric acid. This arose, perhaps, from the circumstance of the cases being treated in an atmosphere less vitiated than that which pervades the crowded wards of a metropolitan hospital. Three of these cases nearly resembled the one above related in extent and appearance, and were cured by supporting the system with generous diet; by quinine and opium administered every four hours; by carrot poultices; and the topical application of the aqueous solution of opium. The fourth case being the most remarkable instance of recovery, after the destruction of so large portion of the substance of the body, I ever witnessed; I shall endeavour to describe its leading features:

CASE 2.

Jane S. aged 19. Towards the latter part of December, 1839, the attention of the guardians of St. Michael's Parish was called to the above individual, who was found by the police sitting on a door step, apparently in an exhausted state; she was ordered by the guardians to be conveyed immediately to a lodging-house, in Simnel-Street, as a temporary asylum, and my attendance was requested. I ascertained that four months ago she quitted the service of a housekeeper, in French-Street, and led a very

irregular life for three months, when she was seized with the small pox. After that disease had run its course, she was left in a state of great debility and distress. The following is her account of the commencement of the disorder now to be described:—for several weeks she had a yellow discharge from the genital organs, when an ulcer formed on one side, which caused great pain, and rapidly spread in every direction. On examination I found the disease had committed great devastation: an immense putrid mass of disorganized flesh extended from the pubes to the posterior part of the fundament; and sideways from the outer part of one tuberosity of the ischium to the other; implicating and destroying the integuments, and all the superficial parts that intervene between lines drawn to meet each other, from the four points just mentioned: thus including the lower portion of the mons veneris, the labia, the perinæum, and extending its ravages to the urethra, the lower part of the vagina, and to the sphincter ani. The first indication that a check was given to the farther progress of the disease was, the partial separation of the living from the disorganized parts; which daily increased till they were separated from their entire boundaries. In the course of ten days the whole of this black and pulpy mass came away; it filled a large plate, and was buried in a hole, dug for the purpose, at the back of the house. It left a granulating cavity to

be filled up, of a full inch in depth throughout; and measuring from the front to the back part nine inches, and from one side to the other about five inches. Until this separation took place, the chamber was constantly filled with so mephitic an odour that when the nurses approached the patient, they were obliged to fortify themselves with spirits to prevent sickness; and to cover the mouth and nostrils with napkins "to strain the air," as they said. In the course of a week, from this time, the patient had sufficiently rallied to be able to be removed on a portable couch into the Poor-house, where she gradually recovered. It was something to escape with life from a disease of so frightful an extent; it was not to be expected that such extensive destruction of parts could be speedily repaired; or that her final recovery should be so complete, as not to leave some relics of the mischief; but by constant care and attention throughout the cure, these were not of great magnitude. The healing of so large a surface necessarily produced considerable contraction of the integuments; and the lower portion of the vagina; so as to leave only a small irregular opening, which prevented the entire obliteration of that cavity. The functions also of the lower bowel and the bladder remain slightly impaired; but only to such an extent as to render it imperative on the part of the patient to attend to the earliest impulses from either of these organs. It will not be necessary to enter

into more minute details; and in concluding this brief narrative I shall only add, that the patient, from being a mere living skeleton, gradually increased in health and strength by the aid of suitable medicine, and a few extras to the generous diet allowed in the Southampton Poorhouse; and at the end of six months she was able to take her share of the labour at the washing tub, with others of the able-bodied inmates of that liberally-conducted and well-regulated establishment.

ULCERATED LEGS.

The relation of a few cases will be sufficient to illustrate the text in the preceding part of this work.

CASE 1.

Mr. D. aged 35 years, a robust farmer, struck his left leg, about nine months since, against a bucket, and just abraded the skin. Being of a gross habit of body, so trifling an injury produced a very foul-looking ulcer, rather larger than a dollar, with a deep purple halo surrounding it of several inches in extent, and which looked likely soon to become part and parcel of the same cavity. The leg was swollen and painful; and the veins were knotty and much enlarged on both sides of the wound; which presented an unhealthy, tawny appearance, and from which exuded a yellow ichorous discharge. He stated that he had tried every thing his medical adviser and friends had recommended, but nothing improved the sore, or lessened the pain. The treatment pursued was to get rid of the peccant humours of his gross habit by active aperient medicines, and while they were

taking effect a very parsimonious regimen was allowed; the wound was cleansed and filled every day with charpie, and a bandage put round the limb, which afforded great relief; and in a few days the ulcer had acquired a red and healthy appearance. The growth of new flesh went on prosperously till it attained the level of the old skin, when the new one quickly formed under the protection of a simple cerate, and in about five weeks the cure was complete.

CASE 2.

T. H. aged 64, a farmer from the vicinity of Romsey, applied for advice June 2nd, 1838. He had two deep, offensive, and painful ulcers on the left leg; one situated nearly two inches above the outer ankle, the other somewhat higher up on the inner side of the leg. There was no great difference in their size or appearance, each measuring about three inches in length and two in breadth; discharging freely, and having a brown slough attached to it. The surrounding skin was hardened, thickened, and presented a polished surface. The ulcers broke out about fifteen years ago; they had been occasionally healed for a short time, but never remained long in that state. For the last five years they had resisted all attempts to close them up, and as the discharge from them had been considerable during that time, the patient felt

assured that his constitution was considerably impaired by it.

TREATMENT.

A piece of lint was cut to a proper size, steeped in the Tinct. Benzoini Comp. and applied to the bottom of each ulcer; the rest of the cavity was then filled with scraped lint, and a bandage applied firmly, but equally, from the toes to the knee. An aperient draught was ordered.

June 5th. On removing the dressings, the slough from the external sore came away with the lint, leaving the cavity paved by large, smooth, and glossy granulations; whilst the slough on the inner sore still remained partially attached to the surface beneath; there was also a considerable diminution of pain. The dressings were repeated and some tonic medicines prescribed.

June 8th. Both cavities are now clean, and the patient is perfectly free from suffering.

June 11th. The granulations are looking healthy in both ulcers, being smaller and more florid; the depth also of each hollow is sensibly diminished since the last dressing. The leg was bound up in the same way, but the tincture was omitted; the scraped lint being considered, from its mechanical pressure, sufficiently stimulating to promote the growth and give tone to the

rising granulations; and so it proved, for no medicinal application was afterwards employed. The ulcers gradually filled up, and at the end of two months they were on a level with the surrounding surface, and covered by a firm and even skin.

CASE 3.

Mary W. aged 40, a fat cook in a gentleman's family, was sent to me by a physician in the town, who very properly considered surgical diseases as not falling within his province to attend. She had a foul ulcer over the kneepan on the right leg, which occupied the whole of the front of the joint, and measured three inches across, and two inches from above downwards. The skin and subjacent tissues were considerably thickened and indurated round the front and sides of the knee, from one hamstring to the other. The sore was more than an inch in depth, and had a greenish slough attached to its whole cavity, which emitted an effluvium that proved horribly offensive to herself and a fellow-servant who slept in the same room. The ulcer had been three years attaining its present size, and had occasioned her great pain.

TREATMENT.

The local applications were similar to those employed in the last case related, but her con-

stitution required a more active course of medicine. In a fortnight, however, I succeeded by these united measures in getting the cavity of the sore into a healthy, granulating condition; and by attention to it every other day, for rather more than three months, the granulations filled it to the level of the surrounding skin, which had also become healthy, and a perfect cicatrization ensued.

CASE 4.

Mr. J. aged 45, when at the age of 25 years, had an attack of typhus fever, which confined him to his bed for three months, during which time his right leg and thigh became swollen to twice the size of the other. From that period the superficial veins of the leg enlarged generally, but had not given rise to any other disease of the part till two years afterwards, when an ulcer formed on the shin bone, which was soon afterwards followed by others, varying in size from a shilling to a crown piece,; and he had endured a constant succession of them for 20 years: as soon as one was healed another made its appearance. When he made application to me, the leg was considerably enlarged; the integuments inflamed and spongy; the veins overloaded with blood; pain considerable; and an ulcer had formed towards the lower part of the calf, measuring about two inches in each superficial di-

ameter. A considerable exudation of aqueous fluid from the whole surface of the leg is constantly taking place, which proves very irritating to the skin, and produces successive patches of excoriations, and small ulcers in many parts of it.

TREATMENT.

The ulcer on the calf of the leg was filled with charpie, secured by a simple dressing, and the excoriated surfaces and the minute ulcerations sprinkled from a dredger with equal parts of prepared chalk and flour. A bandage was then applied, systematically, so as to include the whole leg and foot, except the extremities of the toes; and the patient directed to moisten the bandage thoroughly with an evaporating lotion, and to pursue his daily avocations. Under this treatment a daily improvement took place; the acrid discharge from the surface gradually ceased; the integuments lost their inflammatory character, and became consolidated; the skin assumed its natural hue; and the ulcers firmly healed; and at the end of six weeks nothing remained to be done, but to guard the limb against a recurrence of the ulcerous disease, by supporting permanently the weakened and varicose veins and the integuments; which had been the chief causes of the patient's suffering so much, and for so long a period.

CASE 5.

Mr. W. aged 62, applied to me July 25th, 1839, and stated that he had an ulcer on the outer part of the calf of the right leg, which had annoyed him for the last ten or twelve years, and had cost him, in medical bills, more than a hundred pounds. The whole leg was swollen, and the skin so thickened and hardened that it could not be indented by firm pressure made with the point of the finger. The ulcer was in the situation he described it, about two inches in diameter, and half an inch in depth, with the brawny edge of the skin forming a solid boundary round it. The sore was of a dusky brown colour, and the discharge from it thin and offensive. The pain on locomotion was considerable, and the patient always required the support of a crutch or a thick stick.

TREATMENT.

The ulcer to be dressed with charpie, steeped in a stimulating tincture; frictions to be applied for half an hour every night to the whole of the thickened skin. The leg afterwards to be encircled by a bandage.

July 30th. The leg was much less painful, and rendered perceptibly softer by the frictions; the surface of the sore was also cleaner.

August 3rd. Persist in the treatment, and take an alterative pill every second night.

August 13th. The ulcer feels quite easy, and looks florid and healthy; the bulk of the limb is also diminished.

This course was pursued for three months, during which time his leg was dressed thirteen times; the sore had then firmly healed, and the leg had regained its natural size, and the integuments a healthy elasticity.

CASE 6.

Mrs. H. aged 46. After this lady's last confinement, which happened seven years since, she suffered for some time from a complaint well known in the lying-in chamber as the "white leg." An ulcer then formed on the outer part, and about the middle of the right lower extremity, which augmented to the size of a section of a St. Michael's orange. It was of considerable depth, and occasionally very painful. This ulcer had been most assiduously poulticed, night and morning from its commencement, till her application to me, but the only benefit that resulted from such treatment was temporary relief of pain; the dimensions of the sore remained stationary.

The case was treated on the same principles as those already related, and in seven weeks was perfectly well.

CASE 7.

Mrs. S. aged 30, on descending a staircase rather quickly, fell over something, when she received a contused and slightly-lacerated wound on the left leg, which did not heal, but led to the formation of a considerable ulcer, which had annoyed her for several years, both from the pain and the offensive odour it emitted. She had tried many things to heal the wound; every person who prescribed being confident of succeeding, however different the reputed remedy might be that was recommended. She consulted me in August last, and on removing a heavy poultice, I found the absorbents had been extremely active, for they had nibbled away nearly half the back part of this poor woman's leg. The ulcer was deep, excavated, and of great extent. It threw forth a highly-offensive odour, and was covered by a dirty brown slough; the whole limb was also much congested.

The case required daily attention for some time, and in two months a complete cure was effected, on the plan recommended in this essay.

ON SCROFULOUS AFFECTIONS.

Among the diseases to which a natural predisposition sometimes exists in the constitution, may be mentioned scrofula.

A scrofulous predisposition consists in a liability or tendency to a disease having certain characteristics, and attacking, in a peculiar way, the conglobate glands in various parts of the body, the bones and joints, the tunics of the eye, and other parts. It is of considerable importance to know when a predisposition to any disease exists, that those agents, either of nature or habit, may be avoided which are likely to call the disease into activity.

A scrofulous tendency, whether hereditary or not, is indicated in most instances by a fine clear skin, delicate rosy complexion, large veins, thick upper lip, weak voice, and great sensibility.

Scrofula is closely connected with a delicate constitution and a feeble performance of the vital functions. Those agents, therefore, which are culculated to debilitate the system, and depress

the vital powers, are exciting causes of this disease; as great bodily fatigue and various other excesses, insufficient nutriment, exposure to wet and cold, unwholesome atmosphere, and impaired digestion.

Scrofula manifests itself at an early period of life, by the enlargement and indolent inflammation of some of the superficial glands, especially those of the neck, and beneath the chin, which glands suppurate, and breaking externally, discharge a white curdled matter. At later periods of life, the disease attacks the larger joints, and produces those affections called white swellings; or it is developed in the lungs, by the formation of tubercles in their substance, which proceed to suppuration and ulceration, and terminate in consumption.

Scrofula makes its attack with various degrees of severity; the mildest form in which it appears, is in the irregular swellings under the chin, behind the ears, and at the sides of the neck, which undergo a slow and imperfect process of inflammation and suppuration, and, on discharging their contents, ulcers are left, that spread unequally in various directions. After a time, some of the ulcers heal, leaving ugly puckerings of the skin, and scars of considerable extent, unless properly managed during their progress. Similar tumours often appear in

the groins and different parts of the body, and proceed in their various stages of inflammation, suppuration, ulceration, and healing, with the same degree of sluggishness as those which have preceded them. In combination with the above symptoms, the eyes are often affected with a troublesome inflammation, by which the vision is considerably impaired.

In cases of greater severity, the general disease of the constitution becomes manifest in the bones, which undergo a morbid change of structure; they seem also to contain a smaller proportion of animal earth, and a larger of gelatinous substance, than enter into the composition of healthy bone. Where the joints are the seat of scrofulous disease, popularly called "white swellings," they enlarge, become severely painful, and then matter forms, which discharges through irregular openings made spontaneously in the skin.

These affections produce considerable disturbance in the constitution, and when suffered to proceed under circumstances unfavourable to recovery, as in the vitiated air of the crowded hospitals of the metropolis; hectic fever, and exhausting discharges eventually terminate existence, and more speedily when combined with diseased mesenteric glands, or tubercles in the lungs,

For the cure of scrofula there is no known specific; but its successful treatment will result from the influence of measures calculated to produce a gradual change in the constitution, aided by an appropriate local management. Almost all scrofulous affections are modified by the slow operation of various circumstances; and those persons who are affected with the more severe forms of the disease, and who appear to be getting progressively worse under certain conditions, often convalesce very rapidly when placed under a more favourable combination of agencies. This is particularly remarkable in persons who remove for a time from crowded cities to the sea coast. If a latent tendency to scrofula has been aroused by errors of diet, the substitution of a suitable dietetic plan, and improving the digestive powers, must be the first step in the treatment; if from living in an impure and moist atmosphere, advantage will be derived by removing into one that is dry and salubrious.

When the situation of the disease, and the strength of the patient will admit of it, daily exercise, short of fatigue, in the open air, light and nutritious food, regular hours, and all those means which are calculated to invigorate the body, will materially promote recovery, in whatever form or degree the complaint is manifested; and will contribute to check any tendency to a development of the disease in those persons in whom a predisposition exists.

Disorders in the alimentary organs are generally very annoying accompaniments in scrofulous affections; the proper performance of their functions will be beneficially assisted by the daily use of a combination of gently aperient and powerfully tonic medicines, without adding to the debility which usually attends this disease.

In scrofulous disorders, it will be proper to administer the above medicines in such quantities as will secure the daily expulsion of the contents of the bowels, and prevent any acrid portions of the food remaining, to augment the severity of the symptoms, and prove an additional source of annoyance to the patient.

When this plan has been continued for some time, the health and strength will generally be found improved; for the use of these agents, as I have already observed, will not increase the debilitating effects of disease, but on the contrary, the strength is renovated when they are prescribed under proper limitations.

By the improvement of the general health, greater activity is imparted to the absorbent system, and the dispersion of scrofulous tumours is thereby promoted; this desirable effect may be further assisted by gentle frictions, often repeated with some bland substance, interposed between the hand and the tumour, to prevent abrasion of the skin.

Scrofulous ulcerations in the neck, the groins, the arm pits, and other places, may be treated by compression made in the same manner as that recommended for ulcers of the extremities; and from its gently stimulating nature, when properly regulated in degree, it excites the actions of those sores, which from being too languid, impede their progress towards amendment; and by that gentle excitement, their healing is promoted.

In the more severe forms of the disease, where there are extensive ulcers, and large sinuous abscesses, with copious discharge, every thing must be given to support the strength which diet and medicines afford, and that the stomach can comfortably bear. Jelly, the gravy of meat, milk, wine, iodine, bark, quinine, some of the preparations of iron, cascarilla, and the mineral acids, are among those agents best calculated to impart the requisite degree of energy to the actions of the system, and thereby enable the patient to overcome the disease.

ON DISEASED MESENTERIC GLANDS.

An overloaded or disordered state of the bowels, is not only a frequent cause of injury to the health generally, but it very often occasions, accompanies, and aggravates numerous diseases.

It is essential to the health of young persons, that the alvine evacuations should be more fluid and more frequent than in after periods of life; they should contain just so much bile as will tinge them of the yellow colour of the yolk of an egg. But when the excretions are evacuated less or more frequently than the age of the person requires; when they become offensive in odour, and materially altered in colour or consistence; they indicate a derangement in some portion of the digestive apparatus, an omen by no means to be disregarded, as it points out the approach or actual commencement of disease.

Among the ailments of young persons in which a disordered state of the stomach and bowels is the exciting cause, or at least a prominent symptom, may be enumerated a diseased state of the mesenteric glands. This scrofulous

affection is indicated by the gradual swelling and protuberance of the abdomen, which is hard and knotty, and accompanied by deep-seated and darting pains within that cavity, general emaciation, and some degree of fever, which increases towards evening.

An enlarged and diseased condition of the mesenteric glands is particularly prevalent in populous cities, where children are deprived of ready access to out-door recreations.

Paleness of the countenance (except when flushed with hectic), sharpness of the features, small ulcers appearing at the angles of the mouth, general languor, heat and dryness of the skin, fretfulness, disturbed sleep, and disordered digestion, are symptoms that attend this complaint. The appetite of children so affected is generally unimpaired; indeed they will often take more than an ample quantity of aliment for the support and growth of the body; but neither health nor strength results from it; the food taken oppresses without nourishing the system. The bowels are more or less disordered, and the discharges from them often prove so acrid and irritating as to excoriate the skin around the lower intestine.

Disease of the mesenteric glands is gradual in its progress, and not being attended with

much pain at the commencement, is generally far advanced before it becomes the object of professional attention. The earlier in life it occurs, the greater will be the danger of its proving fatal, but at all periods it is an alarming complaint.

As an auxiliary means in the treatment of disease of the mesentery, the mild aperient and tonic medicines just spoken of will be found of great utility. The irregularity and bad quality of the secretions will be corrected by their use, and any matter that may prove offensive and hurtful will be carried off, without disturbing the functions of any of the alimentary organs, or diminishing the strength of the patient—a circumstance most especially to be guarded against.

Attention must likewise be directed to the augmentation of the vigour of the digestive organs, the occasional use of the warm salt-water bath, frictions over the abdomen, a nutritious and properly-regulated diet, and keeping the patient in the open air in fine weather, with but short intervals from morning till sunset, will materially assist the cure.

ON RICKETS.

It will not be necessary to inquire here, if rickets be an hereditary disease in families; it is sufficient to state, that parents who have been so affected, sometimes have healthy and robust children. The disease often originates in natural debility of constitution; but a variety of circumstances may also conduce to it; as bad nursing, unhealthy quality of the nurse's milk, uncleanness, cold and damp residence, or any other cause that has a tendency to depreciate the general health.

Teething may essentially contribute to the exciting causes of rickets, when it is attended with much pain and difficulty, and the bowel complaints which that process so often occasions.

At the commencement of the disease the child emaciates, looks pale, and his flesh feels flaccid. The head appears disproportionately large to the body, and the neck very slender in proportion to the head; the sutures and fontanelles (spaces between the bones) are preternaturally open. Dentition proceeds very tardily, and

those teeth that do appear soon decay. The bones at the several joints of the limbs enlarge, whilst the spine, the ribs, and the breast-bone, are unusually soft and flexible, and gradually deviate in a variety of ways from their natural form. This want of solidity in the bones is supposed to arise from a deficiency of the phosphate of lime, which the vessels, from debility, are inadequate to convey into their substance, and thereby afford them the requisite firmness to support the weight of the body.

With the above symptoms the child sustains considerable loss of strength, makes no progress towards walking, and is averse to the least exertion. The bowels are usually disordered, and the belly is large and tumid. In the beginning there is but little fever, but in the advanced stage hectic supervenes; the mental faculties are oftener precocious than imbecile.

Sometimes the disease continues to increase till at last every function of the animal economy becomes affected, and the little sufferer is only relieved by death. In others, who survive their infancy, slow recovery takes place, but often leaving the trunk or extremities of the body deformed.

The degree of danger, in cases of rickets, will depend on the size of the child's head, indi-

cating that it contains but little or a considerable quantity of water; on the situation of the distortion in reference to the extent with which it may interfere with the functions of the lungs and the heart's action; and on the amount of disease that has occurred in the digestive organs.

The cure of rickets must be attempted by invigorating the solids, strengthening the system, and by the promotion of perfect digestion. Disorder in the intestinal canal being one of the leading symptoms in rickets, it will be proper to keep the child's bowels moderately relaxed, to preserve them from the irritation occasioned by an accumulation of crude aliment.

As an impure and moist atmosphere has a great share in the production of this disease, the patient should be immediately removed into one of an opposite character.

Exercise, under these circumstances, in a position that will not tend to increase the deformity, is the more essential, because children are not easily prevailed upon to take physic: all that is possible must therefore be accomplished towards invigorating the system, by pure air, nutritious diet, sea bathing, and frictions with various medicated substances.

When medicines can be administered, alka-

line and mineral tonics are highly useful; but much good will be effected by the patient's removal into the country, where an elevated and salubrious situation, with proper dietetic and domestic management, will sometimes do more, in a few weeks, in the cure of this disorder, than months under any kind of treatment in the confined atmosphere of large towns: and thus, in the more severe cases of the disease many patients will be rescued from the grave, who would become its victims without those advantages.

FINIS.