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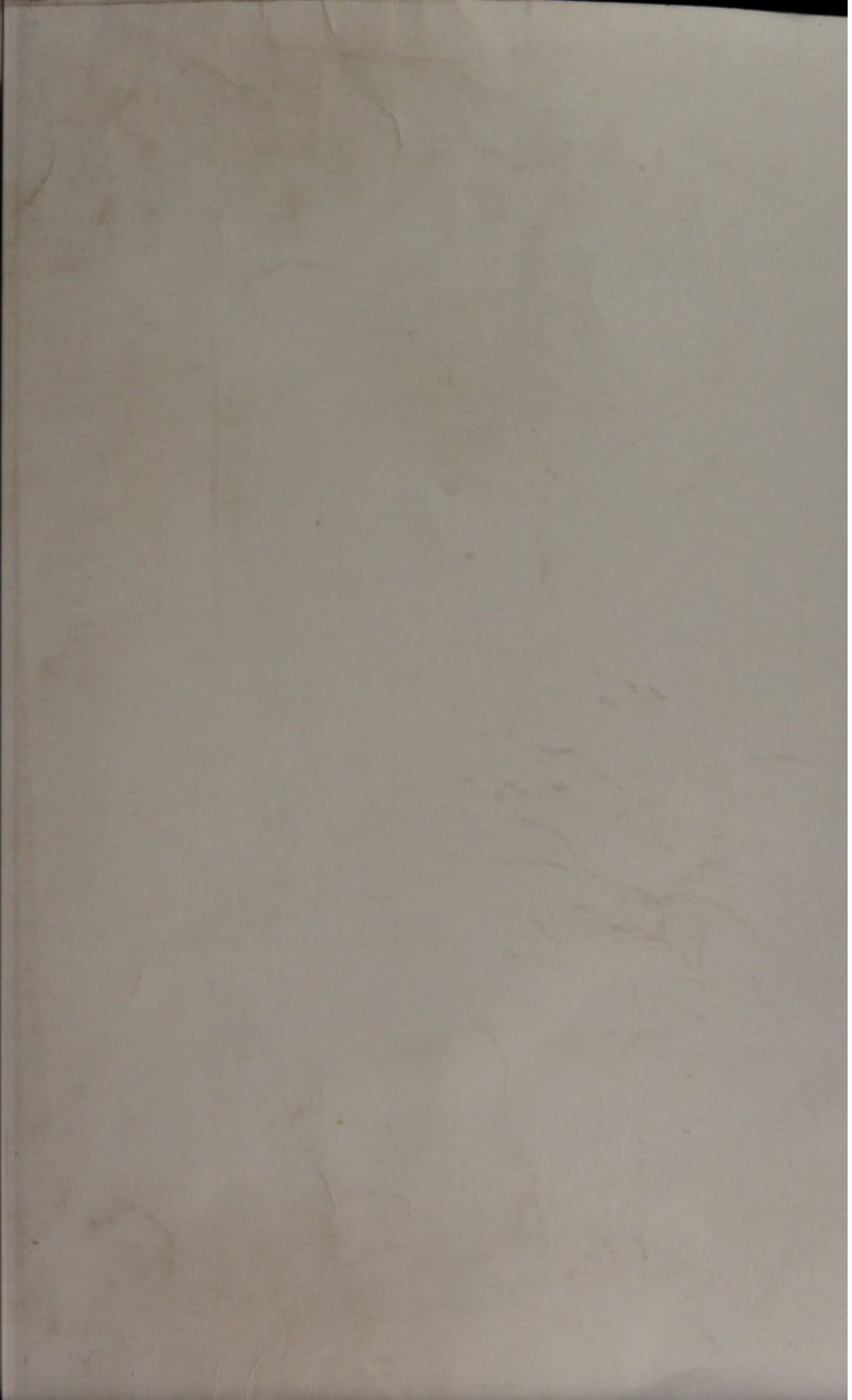
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By T. LAUDER BRUCE

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¹ Read before the Medical Soc
the British Medical Journal, Mar

REMARKS ON THE TREATMENT OF PILES
AND ALLIED AFFECTIONS, INCLUDING
PRURITUS ANI.¹

By T. LAUDER BRUNTON, M.D., D.Sc. EDIN., LL.D. HON. ABER.,
F.R.C.P., F.R.S.

SOME diseases are important on account of their severity and of the danger to life which they occasion, others are important on account of their frequency and the amount of annoyance they cause to the patient. It is only in rare cases that piles cause any danger whatever to life, but they are so exceedingly common, so very annoying to the patient, so destructive of his comfort and occasionally of his temper, that they acquire an importance which justifies me, I think, in bringing the subject of their treatment before you to-night. I shall not attempt to deal with the surgical treatment of this disease, nor can I hope to give you anything very new or very striking in regard to the medical treatment. I rather hope to bring together some simple methods of treatment, preventive and curative, and by exciting discussion on the subject to elicit other methods, some of which may be known to one and some to another practitioner, but which, I think, are not all in common use together.

I need not enter minutely into the pathology of piles, which is fully treated in works on diseases of the rectum; I may merely remind you that they consist essentially of a dilated or varicose condition of the vessels, the arteries, capillaries, and especially the veins of the rectum, which are embedded in cellular tissue of a loose and yielding character, and are covered either by the mucous membrane of the rectum, by the skin outside the anus, or partly by the mucous membrane and partly by the skin, according as they are internal, external, or intermedial (or complicated, as they are termed by Mr. Allingham). The blood from these veins returns in a twofold way into the general circulation. Part of it flows through the anastomoses of the hæmorrhoidal with the

¹ Read before the Medical Society of London, March 7, 1892. Reprinted from the *British Medical Journal*, March 12, 1892.

systemic veins into the vena cava, while another portion passes up through the intestinal and portal veins. The latter portion has therefore necessarily to pass through the liver before it can reach the general circulation, and this is a point of great practical importance, because the condition of the liver seriously affects the circulation in the rectum, and an impediment to the free flow of blood through the liver may tend very considerably to the distension of the hæmorrhoidal vessels and the production of piles.

Our ideas of the liver—derived as they generally are from seeing the organ in the dissecting-room or on the *post-mortem* table—are frequently quite erroneous, for we are apt to believe it to be a hard, solid, unyielding organ, whereas, on the contrary, a sponge would more nearly represent its behaviour. If we take the liver of an animal—such as a rabbit—which has just been killed, and pass a current of defibrinated blood through it by means of cannulæ tied into the portal and hepatic veins, we find that the organ swells up enormously or becomes quite small in proportion to the pressure with which the blood is driven through it. The rapidity with which this distension and collapse occur is so great as to remind one, indeed, of the variations in the india-rubber ball of a spray producer. On looking at such an experiment, the first thing that strikes us is the question, If the liver contracts so readily under variations of blood pressure within it, why do we find the size of the liver so constant in man; why does it not expand and contract as we see it do in the laboratory? The answer to this is, I think, a very simple one. It is that the blood circulates in the portal vein under a very low pressure indeed, one which is not at all to be compared either with the pressure used in the experiment or with that which exists normally in the arterial system. But every now and again we do see the liver undergo changes in living men, quite as great though not so rapid as in the excised liver of the rabbit of which we have just been speaking. Such changes are especially common in men who suffer from malarial fever, though we see them quite as markedly in the subjects of advanced mitral disease. Such distension of the liver indicates that the blood cannot flow away through the hepatic vein so quickly as it enters the portal vein, and this condition may either be brought about by too rapid a flow in the portal vein or obstruction to the circulation either in the liver itself or in the hepatic vein and general venous circulation into which it empties itself. It is quite possible that an augmented entrance of blood into the portal system may

be one factor in producing congestion of the liver; but I think it is probable that portal congestion is generally due to obstruction in or beyond the liver. Nor do I think that obstruction to the flow of blood through the liver necessarily leads to enlargement of the liver, although it may do so. I believe—though it may be difficult to prove—that either the liver itself or the portal vein within it may present an obstacle to the passage of blood, and thus lead to portal congestion without the liver becoming any larger.

On looking at a section of the liver during fasting and digestion, one is struck by the great difference in the size of the cells in these two conditions, the cells being much larger after food. This difference must necessarily lead to a certain amount of compression both of the biliary and venous radicles, and thus hinder to a certain extent the passage of blood through the organ. The walls of the portal vein may also contract and present a certain hindrance. Whenever any portal obstruction occurs it will tend to increase the pressure in the hæmorrhoidal veins, and thus lead to their distension, notwithstanding the fact that the blood in them has another channel of exit. We can readily see that one cause of such an obstruction might be continuous enlargement of the hepatic cells from too abundant feeding, such as gave rise to congestion of the stomach in Alexis St. Martin, as observed by Dr. Beaumont through the fistula in his patient's stomach.

Another cause of portal congestion is, I think, exposure to cold, although whether this acts through the cells of the liver or through its veins I am unable to say. We notice in the case of internal piles the sphincter ani may affect them either beneficially or injuriously, according to the circumstances under which the pile is to be found. So long as the pile remains inside, the sphincter ani tends to support and thus to ease it, and will, indeed, aid the circulation of the blood within it. But if the internal pile should become protruded and grasped by the sphincter ani, the contraction of the muscle will prevent the returning of the venous blood, will increase distension in the veins, and render the pile tense and painful. A somewhat similar action to that of the sphincter ani is said by Verneuil to be exerted by the muscular fibres of the rectum upon the superior hæmorrhoidal veins. These veins pass through little openings, which have been compared to buttonholes in the muscular wall of the rectum. There are two sets of these buttonholes at right angles to each other, the first set occurring in

the circular and the second in the longitudinal fibres of the rectum. These buttonholes, like the sphincter ani in the case of the internal pile, probably have either a beneficial or an injurious action, according to circumstances, upon the hæmorrhoidal veins. It is highly probable, as Mr. Allingham has suggested, that they act as valves, tending to support the column of blood in the portal veins when there is congestion of the portal system, as, for example, in mitral disease; but it seems highly probable that they tend also, under other circumstances, to impede the return of blood from hæmorrhoidal veins by too greatly constricting them, just as the sphincter ani does with a protruding pile. Too great a constriction of these fibres would explain the occasional very rapid occurrence of piles, such as we sometimes find after a violent motion of the bowels, especially when this has been brought on by some intestinal irritant, particularly by such as seem to have a selective action on the lower bowel, like aloes. A similar excessive contraction, due to temperature, may also be the explanation of the well-known frequent occurrence of piles after sitting on a cold stone or on damp grass. It is clear that however strongly the muscular fibres of the rectum contract, they will not cause great obstruction to the return of venous blood through those buttonholes if the longitudinal and circular fibres contract with an alternate rhythm, as they ought to do, because the contraction of the one set of fibres will be accompanied by relaxation of the others, and the flow of blood through those buttonholes will be accelerated rather than hindered by the rhythmical contraction and relaxation exerting a kind of pumping action. But it is quite different if either the one or the other set of fibres should contract continuously, and such continuous contraction probably affects the circular fibres during prolonged straining at stool, when the bowel tends to be everted. Accumulation of fæcal matters in the intestine may interfere with the venous return or may act as a reflex irritant.

We may classify the causes of venous obstruction leading to piles as due (*a*) to portal congestion, and (*b*) to local irritation and contraction of muscular fibres in the rectum itself. But we have hitherto left out of account two other important factors—namely, dilatation of the hæmorrhoidal arteries and local irritation of the veins themselves; both of these probably play an important part in the causation of piles. The part taken by the arteries frequently becomes evident to the sufferer himself from the throbbing pain

felt in the bowels and coincident with the arterial pulses. Local irritation of veins has frequently the effect of causing them to dilate. When working in Ludwig's laboratory in 1869, I made a number of observations upon the effect of local irritation of arteries and veins.¹ In some of the experiments I made under Ludwig's direction the nerves of a part were all cut through, and in the arteries whose nervous supply had thus been destroyed I noticed that the arterial walls, instead of contracting as they usually do upon irritation, become dilated, and the dilatation assumed a somewhat saclike character, which lasted for a long time after the irritation had been discontinued. I observed a similar occurrence in the veins; but, if I remember aright, the veins tended frequently to become dilated on local irritation, even where the nervous supply had not been destroyed, although it is quite possible that the conditions under which the veins were observed may have partially disturbed their innervation. We cannot, therefore, throw on one side the nervous supply of the hæmorrhoidal veins as of no account in the production of hæmorrhage; on the contrary, it may have a very important action indeed, although we may not be at present able to explain it or to define its limits.

Let us turn now to the conditions which tend to bring on piles. First of all, then, we have too free living with insufficient exercise, so that the liver, which may be compared to the coal-bunker of the body, has its cells too constantly filled with reserved nutriment, and this tends to present a hindrance to the passage of portal blood. Next comes what is usually known as a chill in the liver. What the exact pathology of this is I cannot positively say, but it is a condition which comes on with very great readiness in people who have suffered much from malaria, and in them we find that the liver tends to become larger than usual—sometimes only a little, sometimes very much larger—and at the same time becomes tender to touch. This condition is frequently associated with loss of appetite, and sometimes with intestinal pains, and a frequent concomitant of it is piles. This condition is brought on in persons subject to malaria with very great ease indeed, and the observations made upon them are most instructive, as showing us how to treat not only such patients, but also others who may suffer from the same causes in a less degree. There are four places in such persons which are apt to be affected by a chill.

¹ *Ludwig's Arbeiten*, Vierter Jahrgang, p. 107, and *Ber. d. K. K. Gesellsch. d. Wiss.*, Bd. xxi, p. 291.

First, the back of the neck; secondly, the abdomen; thirdly, the shins; and fourthly, the feet. The danger of wet feet is universally recognised, and no one wonders when a person gets gastric or intestinal catarrh, or both together, after sitting in wet boots. The danger of cold to the abdomen is almost universally recognised in tropical countries, and in India people will wear many turns of cloth round their middle who have little covering to the rest of their bodies.

The danger of chill to the back of the neck is less recognised, but while a cold wind blowing in the face may be braved with impunity, I have seen a cold draught on the back of the neck bring on a fit of ague in a little more than five minutes. The risk of a chill to the shins is still less known, but is very important, and perhaps the cause of more unsuspected disturbance of the liver than all the others put together. While the body and feet are warmly clad, people frequently go about wearing short socks and thin merino or silk drawers, which form a very imperfect protection from the cold air which passes up under the trousers. Thus it is that in travelling the legs frequently become chilled; but a chill is got more often still by the person sitting between the door and fire-place. As the fire burns briskly in an open grate, the heated air passes in a rapid current up the chimney, and its place must be supplied by fresh air from outside the room. It is quite unusual to find a Tobin's tube or other ventilating apparatus in a room, and consequently the air must come either through crevices in the window or the door. In a well-built house the windows fit tightly; the door also fits tightly into its frame on both sides and the top, but underneath there is usually at least half an inch between the door and the floor, so that it may not rub against the carpet. Underneath the door the cold air comes, and if the fire is burning briskly there is a strong draught which may be felt by any one who puts the hand to the foot of the door. This cold draught diffuses itself along the floor on its way to the fire-place, and if any one sits in it his feet and legs are apt to become chilled. He may not be aware of the reason, for neither he nor any one else may be able to feel a draught at the place where he is sitting, because even when a draught is quite strong at the doorway itself, it becomes too weak to be felt by the hand held close to the floor across the room for a few minutes. Yet it may be quite sufficient to chill the limbs of any one sitting in it for half-an-hour or longer.

The next cause of piles is local congestion of the rectum by straining at stool. This must be carefully avoided, and the patients instructed not to remain long in the closet. There is frequently a tendency to do this when there are piles, even when the bowels move freely, because the piles themselves give a sensation to the patient of something in the rectum, and he strains to get rid of what he believes to be the fæces. The more he strains the worse he gets, until the piles come outside, and then he may think that the bowels are empty. In cases where the motions are very constipated, an aperient pill, liquorice powder, cascara, or other simple laxative may be employed to keep the bowels open; or glycerine enemata or suppositories, or an injection of simple water or oil may be used.

And here I think it is worth while to give a warning against the water-closet as a place where there is a great risk of another sort, and which, indeed, may lead to fatal consequences. As a rule the water-closet is destitute of every means of warming it, and people who would never dream of going out of the house into the open air without warm clothing, will sit in the closet, which is quite as cold as the external air, not only without any extra covering, but with a considerable portion of their body exposed, and will sometimes remain there for as much as ten minutes, and in some cases even more. They thus run a great risk not only of chill to their abdomen, which may lead to portal congestion and piles, but even of getting a chill which may result in pleurisy or pneumonia. This danger is one which ought to be avoided in cases of convalescence in acute disease, such as influenza. I have been astonished to find so many patients completely neglect what appears to be such a natural precaution. In such cases the patient ought to be obliged to use a commode in his bedroom, or the closet should be warmed by a large paraffin lamp or stove.

Local congestion by excessive straining may be due, not to constipation, but to diarrhœa. The intestinal condition which gives rise to this may be due to acrid substances, which not only irritate the upper part of the bowel and give rise to increased peristalsis, but they may have upon the rectum a double action, namely, (1) an irritant one on the mucous membrane giving rise to straining and sometimes to a feeling of burning; (2) an irritant action upon the veins and arteries tending to cause dilatation and varicosity. Another condition of the fæces which may give rise to local irritation is a pulpy sticky condition so that they are with difficulty

removed. This condition leads to increased rubbing of the anus with paper in order to cleanse; and if small external piles be already present, the difficulty of cleansing is rendered greater because the fæcal matters tend to rest in the crevices between the piles, and so are removed with difficulty. If printed paper from which the ink comes off be used, the irritation appears to be greater, and the mere continued use of such paper may tend to cause piles even in persons who might otherwise be free from them.

Local congestion of the rectum is increased or brought on by sedentary occupations; for in these not only does want of exercise retard the flow of blood, but the local warmth tends to cause distension of the hæmorrhoidal vessels and bring on piles. When persons have to sit much they ought either to use a hard wooden chair or a cane-bottomed chair. If by chance the chairs with which they are provided in the offices they hold are soft and stuffed, they may use a circular cushion with a hole in the middle, so as to give a certain amount of ventilation and coolness to the neighbourhood of the anus itself. Such cushions also relieve pressure on piles already present.

There is still another factor to be borne in mind in the causation of piles, and that is the general condition of the patient as affecting the state of his vessels. Gouty people are particularly prone to phlebitis, and in them we find inflammation of the veins of the legs occurring now and again without any apparent reason. But we know as a matter of experience that a glass or two of champagne tends to exacerbate gouty symptoms as a rule, and in some people a glass or two of champagne may bring on an attack of piles. Of course it is possible that the wine here acts partly through the liver by obstructing the circulation in it in the way already discussed, but it seems highly probable that it has another action as well upon the hæmorrhoidal vessels themselves.

Turning, now, to the treatment of piles, we may consider, first, how we are to keep the liver in such a condition as to maintain a free supply of blood through it. For this purpose, we should insist on moderation in cases where we have reason to believe that either the food or the stimulants taken are in excess of the wants of the organism. The occasional administration of small doses of a mercurial purgative, followed by a mild saline, tends to keep the liver free and to prevent piles, although one may not know the exact *modus operandi* of the mercury upon the liver. Of

course the saline ought not to be too violent, or it will tend to cause local congestion and make matters worse. Aloes bears an evil repute on account of its irritant action upon piles, but its effect depends upon the quantity given; and while a large dose of an aloetic pill will almost of a certainty produce rectal irritation, small doses such as $\frac{1}{10}$ grain of aloin three times a day with each meal, will tend to lessen piles by keeping up a gentle peristaltic action and preventing constipation. My friend, Mr. Archer, tells me that he has used with invariable success half an ounce of castor-oil given to begin with, and followed up by half a drachm every morning for a month.

I have already discussed the prevention of portal congestion from chills, but when it has occurred a useful application is a hot-water india-rubber bag, with a plush or flannel covering, put under the back of the neck, and a similar one over the liver. This tends to restore the equilibrium of the circulation and lessen portal congestion.

Exercise is useful in keeping the liver free, but this exercise must be of a certain kind. As I have already said, the liver is a very spongy organ, the blood pressure within it is very low, and the pressure under which bile is secreted is also very low. Both blood and bile, therefore, tend to stagnate within it, but this stagnation is lessened by the liver being rhythmically squeezed, more or less forcibly, between the diaphragm and abdominal muscles. In a person standing or sitting upright, or lying on either side, this squeezing action is very slight; in a supine posture it is slightly greater. In ordinary walking it is also very slight, but in walking up a hill, and especially in climbing a mountain, the amount of pressure to which the liver is subject is considerable, because the muscles of the abdomen in such exercise are actively contracting, and the movements of the diaphragm during the panting breathing which occurs on exertion are much greater than when a person is quiet. A similar process of squeezing occurs in brisk horse exercise, either trotting or cantering, and thus riding is frequently beneficial for piles, notwithstanding the increased local irritation from contact with the saddle. Another useful exercise is to touch the toes with the fingers, keeping the knees straight, several times every morning.

A regular action of the bowels is of the utmost importance in preventing piles, because it tends not only to keep the circulation through the liver free, but prevents straining. The different

means of ensuring this regularity of action would require a paper to themselves, but a teaspoonful of compound liquorice powder at night, or confection of senna either alone or with confection of sulphur and confection of pepper, are perhaps amongst the most widely employed of all the laxatives. No doubt the best times ordinarily for emptying the bowels is after breakfast, but if the piles tend to come down much it is better for the patient to get into the way of emptying the bowels every night before going to bed, so that he may secure rest in a recumbent position for several hours. Some patients in whom the piles come down easily spend a day of misery if they are obliged to go to the closet in the morning instead of the evening, because the piles tend to remain down all day and worry them.

The soft unprinted papers which are now commonly sold are a very great improvement upon the ordinary newspapers, but even they sometimes give rise to a good deal of irritation. In cases where the piles are very troublesome it is always well for the patient to wash the anus immediately after a motion. It is sometimes impossible for the patient to go from the closet to his bedroom and wash there, and I have found the easiest way of getting over this difficulty is for him to carry with him to the closet a soft sponge in a small india-rubber bag; an ordinary tobacco-pouch is best. If it should be an earth closet, the patient should take the sponge full of water, and, after cleansing the anus gently with paper, he may thoroughly sponge, and then return the sponge to the bag. The anus may then be dried either with the porous paper, or with a small napkin which he carries with him. In the case of a water-closet the sponge may be taken dry, and after the closet has been used the plug may be drawn and the sponge dipped in the clean water which then fills the pan, and used in the way I have just mentioned. The patient should also take with him to the closet a small bottle of some preparation of hamamelis and some prepared wool. This should be sheep's wool deprived of its fat, and not cotton wool. The wool thus prepared is quite absorbent, and takes up the hamamelis readily. It differs from the cotton wool in one important particular, for it forms a kind of felt, which the cotton does not. A small pledget of the wool about the size of a hazel nut should be dipped in the hamamelis and introduced within the anus, and a similar pledget, likewise soaked in the hamamelis, should be introduced so far within the anus that a few fibres of it at least are caught by the sphincter. The external

pledget soon becomes felted together into a regular pad, fitting completely to the anus, and being retained by the few fibres caught by the sphincter it will remain there for twenty hours, while a similar pad of cotton wool might not remain as many minutes. This wool pad not only keeps the hamamelis in constant contact with the piles, but also affords a certain amount of mechanical support. In patients suffering from piles we frequently notice an almost involuntary tendency to sit on the corner of a table or on the arm of a chair, or to put the hand behind and press upon the anus from time to time; but the woollen pad, by affording a constant support, tends to lessen the necessity for pressure in any of these ways. Where the piles are chiefly internal the hamamelis may be applied in the dose of half-a-drachm to a drachm, either diluted with water, or, as is sometimes preferable, undiluted, by injecting it within the anus by means of a glycerine syringe. The success of this treatment in stopping hæmorrhage from piles is really extraordinary; within a week I have stopped the hæmorrhage from piles which were bleeding so profusely that a colleague thought that an operation would be necessary. But not only does the hamamelis stop hæmorrhage, it lessens the uncomfortable weight and aching pain which so frequently accompany piles, especially when they do not bleed; and it will even greatly lessen or remove the pain which occurs in piles when they become inflamed. I have tried various preparations of hamamelis, but I have not found either the tincture or the local extract, both of which are to be found among the recent additions to the *Pharmacopœia*, nearly so satisfactory as some of the proprietary preparations.

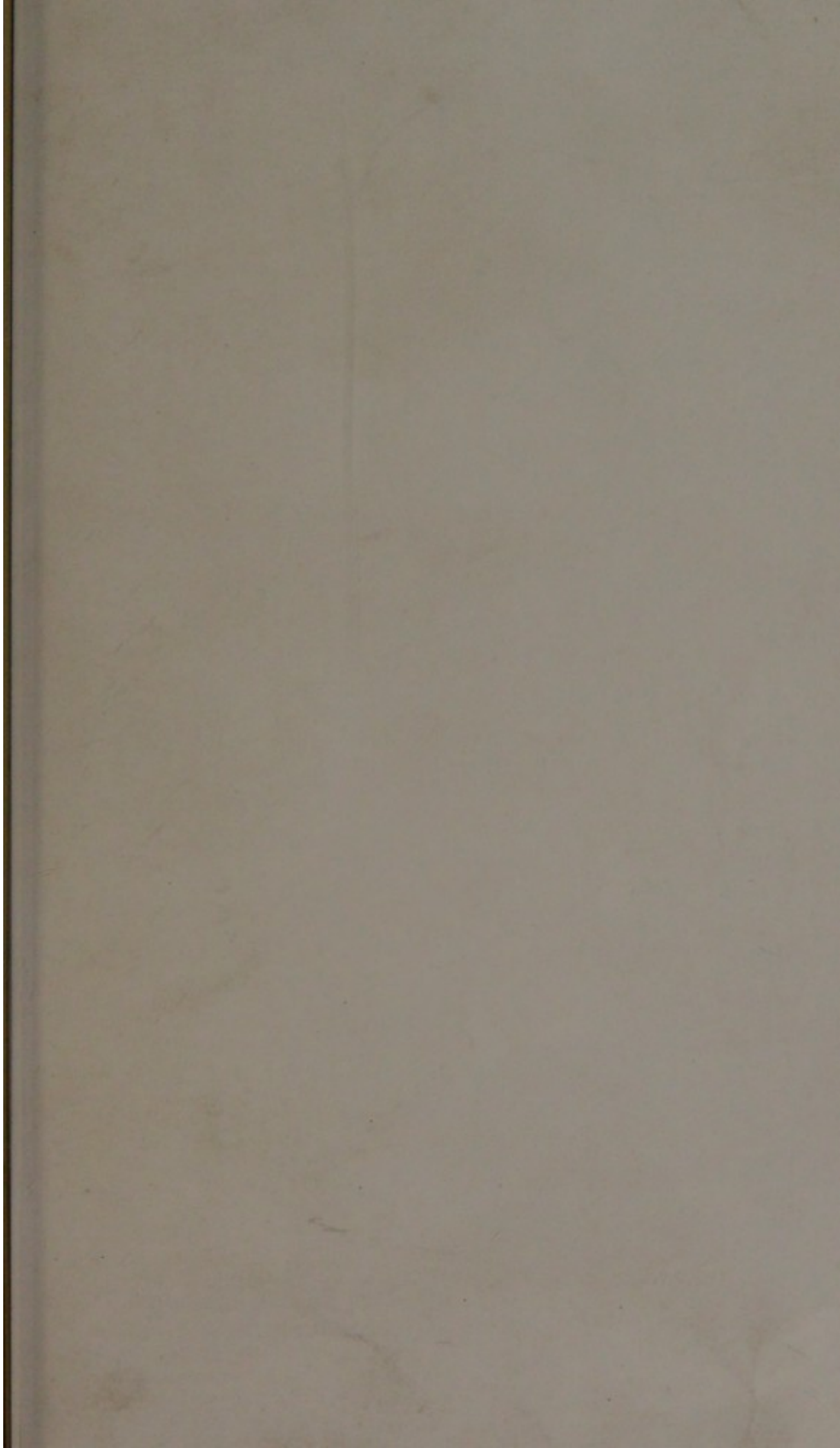
The patient requires to be carefully instructed in the mode of using it, otherwise disappointment may ensue. Some time ago a lady who was passing through London on her way to the Continent was seized with a sharp attack of piles. I was asked to see her at an hotel, but, not being able to go for a couple of hours, I hastily wrote down a prescription for hamamelis and gave it to the maid, with, as I thought, definite instructions how to apply it. On going to the lady two hours afterwards, I found that she had used the whole bottle, but with no relief whatever; nor was this to be wondered at, for the piles were internal, and the hamamelis had only been used externally. Lanolin takes up a considerable quantity of hamamelis, and a combination of the two forms a most satisfactory ointment.

In obstinate cases of piles, great relief is afforded by the anal

pad. The simplest is one of india-rubber with elastic straps to hold it in place, but it does not give, I think, quite the same relief as one in which the pad is pressed against the anus by a spring attached to a metal girdle which passes round the loins.

Before concluding this paper, I may mention another affection which frequently goes along with piles, and is most annoying, namely, pruritus and eczema round the anus. Both of these affections may be lessened by a simple remedy—eau-de-cologne applied to the itching surface with a small sponge or pad of cotton wool. If the skin be at all tender, undiluted eau-de-cologne gives rise to intense burning pain, but this may be prevented by diluting the spirit before application. The diluted spirit does not have such a strong and permanent action in lessening the itching as the pure spirit, and where the itching is at all great, the pure spirit may be used, notwithstanding the pain it causes, for it converts the intolerable itching into a severe smart, and this may be relieved by diligently fanning the part till the spirit evaporates.

I have not attempted to discuss all the methods of treatment; I have rather brought forward some which I have found practically exceedingly useful, and which are, I think, at least in their details, not so widely known as they deserve. I am quite conscious how trivial they are, but the number of cases in which piles occur give an importance to any useful method of treatment, however trivial it may be in itself, and this must be my excuse for bringing the subject before the Society.





Some tight gutters.

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