T H E

BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. XXVIII.

WEDNESDAY, APRIL 26, 1843.

No. 12.

ON MORTIFICATION.

By R. A. Stafford, Esq., Surgeon to St. Marylebone Infirmary.

THERE has lately been in the St. Marylebone Infirmary a most interesting case of mortification or gangrene under my care. It occurred in a poor boy who had been nearly starved to death. He was found in Gee's court, leading out of Oxford street, and was brought to the Infirmary by two policemen. The account he gave of himself is as follows:—That for a length of time he had been sometimes in and sometimes out of work; and from the uncertainty of getting employment, he had been frequently nearly a week together without tasting food; and not liking to go to the workhouse, all he has had to subsist on has been a cup of tea and a bit of bread and butter, given to him occasionally by those in the same house almost as poor as himself, and who stinted themselves to support him. His friends at length left the house, and some of them promised him to go to the workhouse to state his distressed condition. They did not, however, do so. He gradually became weaker and weaker, and no one went near him; he at length contrived to crawl up from the kitchen in which he was lodging, and placed himself at the door of the house, where he was seen by a policeman. When admitted he had not tasted food, or even a drop of water, for four whole days!

The present condition of the poor fellow is, that both of the lower extremities are mortified; in the right leg the gangrene begins about three inches above the ankle, and involves the whole foot, it being black, and apparently the death of the part is complete. In the left leg the mortification begins about two inches from the knee, and extends all over the lower part of the limb, looking even blacker than the other leg. The stench is horrible, and the whole sight most disgusting.

The circulation of the poor boy is in the lowest state of languor; the pulse is hardly perceptible, the voice feeble, and the countenance expressive of the greatest degree of exhaustion. So inclined is the whole body to mortify, that the tip of the nose is gangrenous, and the points on the patellæ are disposed to slough.

On his arrival into the Infirmary he was immediately placed in bed, and poultices of bran, mingled with a solution of chloride of lime, were applied to the mortified limbs, and also a turpentine liniment to those parts where there was any appearance of life. He was carefully fed with beef-

tea, giving a small quantity every now and then, so as not to overload the stomach, or at first to stimulate him too much. By degrees, and as he could bear it, the quantity of food was increased. He was ordered bark (quinine) and wine cautiously and sparingly. These remedies were gradually increased in dose and strength as he became stronger; and when the sloughs began to separate from the living parts, he was ordered a meat diet, porter, eggs, and other nourishment. The mortified surfaces were incised both longitudinally and laterally in every part. The separation of the mortified from the living parts went on rapidly, and the left leg was completely barked, or denuded of the integument, so that in the greatest part of the limb the muscles and tendons were exposed almost as clean as if they had been dissected, the foot being quite dead: in the right the mortification had extended through the tendo-Achillis down to the bone; and the ligaments of the ankle-joint had given way.

The boy had gone on well for five weeks, and it was proposed, when his general health was sufficiently restored, to remove both limbs at the spot of the line of demarcation of the separation of the living from the dead parts. He was, however, without any apparent cause, suddenly taken with a shivering fit; fever supervened; he refused all food, and died in four days.

His body was examined. All the viscera were healthy, and no other cause could be found to account for his death than the mortification.

Mortification, besides the different terms which have been employed to express its different characters—sphacelus, slough, &c.—has been divided into two principal varieties, humid and dry gangrene; or what I think might be a better term, would be acute and chronic.

Humid gangrene is where the mortification is moist and contains the fluids of the part when it died.

Dry gangrene is where the death of the part has taken place gradually, from a diminished circulation through it, or from a disease of the vessels. The gradual death of the part is well exemplified by *gangrena senilis*. Here the arteries are ossified, and the flow of blood through them is so diminished that first the extremities and points of the toes become mortified from want of a proper supply; then the first phalanx, creeping on, drying as it goes, to the second and third joint of the toes; and at length the whole foot becomes involved.

In humid gangrene, however, the death of the part is immediate; the inflammation has been so violent, that sloughing has quickly taken place, and there has been no time for the fluids to evaporate: hence the broken-down and mortified structure remains moist.

Mortification arises from the undue circulation of blood in a part: either that there is a deficiency, or total absence of it; or that the circulation through it is too great, whereby inflammation arises to such a height as to destroy the structure of a part and cause its death. The process by which it takes place, from whatever cause it may arise, is, first, that the capillaries of the dying part become plugged up by the coagulation of their contents, and then by the coagulation of the blood in the larger vessels; consequently circulation through them is at an end, and accordingly the

part so affected undergoes that change which occurs to the whole body after death.

Mortification or gangrene may be caused in various ways: by inflammation, such as we see in phlegmonous erysipelas; the carbuncle; wounds after severe accidents, &c.; by the want of a proper nourishment of a part; by a disease of the heart, this organ not having sufficient power to throw the blood to the extremities—a case of which I once saw at St. Bartholomew's Hospital; by cold, for instance frost-bitten parts; and by inanition from want of food, like the case already related at the beginning of this paper. Mortification may also be caused by other means. There is hospital gangrene, a disease occurring in crowded wards, and of an infectious nature. In this disease, wounds, of whatever character they may be, become gangrenous, being of a putrid, pulpy texture; and when one patient of a ward has been attacked by it, the same character of gangrene appears in the wounds and sores of others. Of late years the disease has been of rare occurrence, as hospitals are more cleanly kept and better ventilated than formerly. Now and then, however, hospital gangrene makes its appearance, and more particularly in military hospitals after battles, when the wards are crowded by the wounded. It appears that hospital gangrene begins by the formation of a vesicle on the edge of a sore, containing a watery fluid of a livid or a reddish-brown color. It is attended by an extreme stinging pain; and when the vesicle breaks, sloughing commences from the spot, and spreads all over the wound, forming its surface into a pulpy, unorganized mass. When this slough is separated, the ulceration continues; the cavity of the wound increases in size, and its edges become indurated. The sore discharges at first a thin glutinous matter, and afterwards a matter of a thicker character, being of a dirty yellowish white, and sometimes of a black or brown color.

Animal poisons may produce gangrene; for instance, a peculiar syphilitic poison causes sloughing phagedena, which is proved by the part being destroyed by nitric acid, and it recovers. Putrid meat on a wound will give rise to it also. I have seen cooks and butchers, who have wounded their fingers where the meat was tainted, get gangrene of the wound; and in one case I was obliged to amputate the finger. In another case, also of a gangrenous sore on the finger of a cook, which could not be accounted for, its character was so peculiar that I was led to inquire whether she had handled tainted meat. I found this to be the case, and it could be traced to this cause. Those who have to do with the hides of animals are often the subjects of a peculiar black gangrene, or mortification. There are perhaps several spots on the fingers and hands which become mortified, and the slough is very dark, and of so peculiar an appearance that it cannot be mistaken by those who have seen it. I remember several instances where persons have presented themselves at hospitals with black, sloughing wounds on their hands, and on inquiry their employment has been connected with the hides of animals.

There is a disease termed *cancrum* or *gangrena oris*, which occurs

after measles, or fever. It first shows itself by a dark vesicle on the lips, when ulceration and sloughing commence. The sloughing goes on rapidly, and no application can arrest its progress. It destroys, perhaps, more than half the cheek; and the patient being in a low condition, generally sinks under it. A case of this description happened a few weeks ago in the St. Marylebone Infirmary, under the care of Dr. Clendinning, and I saw it also myself. It was in a child of five years of age, who had had the measles. Numerous applications were employed, even to nitric acid, but none of them had the least effect. The child was also supported by bark, wine, and nourishment, but it died.

Mortification is often produced by bad food, and I believe that almost all the sloughing sores we see which occur among the poor arise from want of proper nourishment. I have endeavored to trace the origin of the sloughing ulcer seen in hospitals, and I have found, with very few exceptions, that the individuals suffering from them have been ill-fed, lived in ill-ventilated rooms, and have suffered the extremes of poverty. A very curious description of mortification is recorded, which is caused by eating bread made from bad or diseased rye; and the same also has happened from eating the bread made from black wheat. This species of gangrene is of a dry nature, and takes place gradually. Authors inform us that this gangrene is as dry as touchwood, or as the limbs of a mummy. It is impossible to account for it, but no doubt the ergot of rye which is eaten has some effect on the blood, causing its coagulation and want of vitality in the extreme vessels. Pressure will give rise to mortification when the patient is in a debilitated state. This we too frequently see in those who have long lingered from disease. The parts which come chiefly in contact with the bed, from natural pressure made by the weight of the body, become mortified; and when this occurs, it generally accelerates the death of the patient. I believe it has often happened in chronic diseases (such as those of the joints, the spine, &c.) that this mortification arising from pressure has prevented the recovery of the patient, which otherwise would have taken place. From the feebleness and the emaciated state of the body, it has been impossible to prevent it: consequently the patient has to contend with a double disease, which will necessarily wear him out. The profession and the public cannot be too much obliged to Dr. Arnott for the invention of the water-bed—an invention which, though simple, will conduce to the comfort and prolongation of life of thousands, and the recovery of many. It is much to be regretted that the inventions which tend to save the life of our fellow creatures are not more noticed by the government. Some public testimony to an individual who has employed his talents for the good of the community would be an encouragement to others to follow his example.

I have seen, within these last few years, a description of gangrene which does not appear to me to be common. It breaks out in patches on different parts of the body, and more particularly in the lower extremities, being, perhaps, about the size of the palm of the hand. The part at first is extremely hard, and its circumference is well defined, feeling al-

most like a foreign body being introduced into the cellular structure. There is a slight red blush at first upon it, and the part is slightly elevated, but it does not appear to be attended with great pain. The redness of the skin increases, and it becomes of a deep purplish blush. In a few days the whole mass, which was hard, becomes a slough, resembling a rotten pear, being shreddy and pulpy, and of a dirty-brown or yellow color. The slough is gradually separated from the living part, and a deep, rocky, irregular sore is left with indurated edges. It generally happens that these patches of gangrene occur in more than one spot at a time, and they go on breaking out one after another for a continuance; and while one ulcer made by it heals, another spot makes its appearance. It is evident that this disease, like carbuncle, arises from a lowered state of constitution.

I need hardly say that the strangulation of a part produces mortification; for instance, in hernia, when the gut has been incarcerated too long before the operation is performed, it mortifies. So, likewise, when we artificially place a ligature round a part—such as a polypus, a hæmorrhoid, or the tonsils of the throat, &c.—it dies. Extravasation of the urine will give rise to sloughing abscesses, and mortification of the cellular structure. These cases are very common, and of almost daily occurrence.

The sudden stoppage of a current of blood, when the anastomosing arteries have not sufficient power to carry on the circulation, will often cause mortification of the limb where that current is so arrested. For instance, in aneurism, such an occurrence may happen. It has, to my own knowledge, often taken place in popliteal aneurism, when the femoral artery has been tied. I have seen four or five cases of it, where the leg has mortified after the operation, in consequence of which the patient has died. To remedy so fatal a catastrophe, if possible, would be most desirable: and I have a proposal to make to prevent a recurrence of it.

We all know that when so large a vessel as the femoral artery is tied, the circulation is carried on by the profunda femoris, and its anastomosing branches with those of the anterior and posterior tibial arteries. Now it is impossible to know whether these vessels are strong or weak—large or small. If they are strong and large, they may carry on the circulation very well; but if they are weak and small, it is impossible they can do so; therefore the mischief takes place. Now I propose that a tourniquet be placed on the femoral artery below the origin of the profunda, and as near to the aneurism as possible, for a few hours every day, for some time before the operation—a month, perhaps, or as long a time (should experience prove the utility of this method) as it may be required. By doing this, the current of blood through the main trunk of the femoral artery would be gradually stopped, and the circulation would be carried on through the profunda and the anastomosing vessels; whereby they all would be enlarged and strengthened by degrees, and consequently would admit the blood more readily through them. When, therefore, the operation of tying the femoral artery is performed, the profunda and anastomosing vessels would have already been accustomed to carry through

them the increased current of blood; and consequently the danger of mortification of the limb would be much less, if not altogether prevented.
—*Lon. Med. Gazette.*

HOMŒOPATHY ILLUSTRATED.

[IN a notice in last week's Journal, of the Transactions of the Medical Society of the State of New York, the address of Dr. T. W. Blatchford on Homœopathy was alluded to. We have copied below a few paragraphs from it, but hardly sufficient, we fear, to give the reader a correct idea of a production which occupies nearly a hundred pages, and which seems to have been prepared with much industry and talent.]

Of what possible value, I ask, are all the late splendid researches in pathological anatomy and in physiology, in the estimation of a man who could write such a sentence as the following? "I cannot comprehend," says Hahnemann, "how it is possible for physicians to imagine that they ought to search the interior of the human economy: it is inaccessible and concealed from our view." And again at page 26, "just as little," says he, "as we can witness what is passing in the interior of our bodies in a healthy condition, and as certainly as they are concealed from us as they lie open to the sight of Omniscience, just so little can we perceive the internal operations of the animal frame when life is disturbed by disease. The action that takes place in diseases manifests itself only by external symptoms." And at page 84, he says, "in what manner the vital principle produces morbid indications in the system, is to the physician a *useless question*, and will therefore ever remain unanswered. Only that which is necessary for him to know of the disease and which is fully sufficient for the purpose of cure, has the Lord of life rendered *evident to the senses*." I am aware that homœopathists in this country deny the charge brought against Hahnemann of being opposed to pathological investigations; but his own pen has rendered the attempt futile. And Hahnemann is doubtless consistent with himself in this respect, for of what use can such researches be to a system which broadly and repeatedly asserts that sensation is the true, the only true index to disease? It is true, Hahnemann talks about the pulse, and the tongue, and the secretions, but it can only be for a similar reason to that which he gives for continuing a species of names for disease, "that we might," says he, "by degrees dissipate the illusion." But Hahnemann is not the only homœopathist who speaks contemptuously of pathology: another, of authority sufficiently high for Hahnemann himself to quote, writes thus: "The physician who engages in a search after the hidden springs of the internal economy will hourly be deceived; but the homœopathist possesses himself of a guide that may be depended on."

"The sole inquiry of the physician," says Dr. Hering, the apostle of homœopathy in Pennsylvania, "is after the symptoms, because the symptoms alone determine his choice of a remedy; and upon the fulness or accuracy with which these are noticed, rests the entire manage-