cardiac failure, there is, no doubt, an altered and impaired state of nutrition in the cardiac tissues, sometimes rendered palpable by degenerative changes recognisable with the microscope or pointed to by the presence of disease in the coronary arteries or conditions indicating a changed coronary supply (for example, aortic regurgitant disease). In other instances there is, no doubt, a disordered nutrition, which gives no outward and visible sign to histological examination, just as conditions of defective nutrition (attended by a striking increase in the ventricular susceptibility) occur, without recognisable structural change, in the heart of a healthy mammal when the organ has been placed under abnormal conditions—as in the course of experiments conducted with the thoracic cavity laid open.

With regard to angina pectoris, there is no ground for supposing that fibrillar contraction is present during the paroxysms. Indeed, such an idea is negated by the fact that the pulse-beat can commonly be felt during the attack, whereas the fibrillar mode of ventricular action involves a complete abolition of both cardiac and arterial pulsation. Moreover, we know that angina is closely associated with a high blood-pressure; on the other hand, fibrillar contraction is accompanied by a rapid fall of blood-pressure towards zero. At the same time, there appears to be a great probability that the occurrence of sudden death in angina is often determined by the ventricles passing into delirium. There is good reason to believe that it is in this way mainly that some fatal attacks of angina reaching a suddenly fatal issue differ from previous attacks.

In some cases of fatal syncope there appear to be good grounds for assuming that the heart has been brought to a diastolic standstill by powerful inhibitory impulses transmitted along the vagus nerves. But even in such instances it is very possible that fibrillar contraction comes into play—that the inhibited heart may be put beyond the chance of recovery by the lapse of the ventricles into delirium. We know that in mammals it is possible to keep the heart arrested only for a comparatively short time by vagus stimulation; the rhythmic action then becomes resumed. Of course, it is possible, on the other hand, that the inhibition is a very powerful one in man, and that the period may be long enough to cause death. The assumption of inhibitory arrest cannot, in any case, be made to cover the whole of the cases of sudden cardiac failure, for such failure, involving immediate death, is often unattended by any grounds for inferring the occurrence of a sudden excitation of the cardio-inhibitory mechanism.

Rupture of the heart has been found only in a small minority of the recorded cases of sudden death, and plugging or obstruction of the coronary vessels must be very rare.

Over-distension of the cardiac cavities has already been mentioned as a cause put forward to explain a sudden arrest of the heart in diastole, the state of matters being comparable to what obtains in an over-distended bladder. Such a sudden arrest I have never witnessed in the course of my experiments on the mammalian heart, apart from inhibitory causes or excess of anaesthetics; I have never seen any sudden and fatal ventricular failure taking place in this way, even in hearts that had been exposed for hours, and had become much enfeebled, though still able to keep up a sluggish circulation of the blood. In man, again, it is important to note the significant fact that sudden and unexpected cardiac failure occurs by no means most commonly in cases of dilated heart with thin and flabby walls, upon which over-distension or strain might most readily tell in the way of arresting their action in a purely mechanical fashion.

The danger of gastric flatulence in heart disease has recently been emphasised by Dr. George Harley in this JOURNAL, the danger of cardiac failure from the direct pressure of a wind-distended stomach affecting the heart through the diaphragm. Sudden death brought about in such a way would probably be determined by fibrillar contraction in the ventricles. I have often seen such a result from pressure on excitable ventricles.

The mechanism of fibrillar contraction I cannot enlarge upon here. I have already discussed it in the *Journal of Physiology*, vol. viii. I regard the condition as an outburst of disordered excitement in the ventricular muscle; a rapid succession of incoordinated contractions travelling peristaltically along the complexly interlaced anastomosing fibres of which the ventricular walls are built. Recovery is quite possible in many animals, most readily in the lower mammals. In the cat I have seen a restoration of the normal cardiac beat after the ventricles had been in delirium for more than an hour. Rhythmic compression

of the ventricles with the hand was kept up, and pilocarpine was injected into the circulation. Pilocarpine has a decided tendency to check the fibrillar movement, depressing, as it does, the excitability of the cardiac muscle.

In conclusion, admitting the possibility of sudden syncope from plugging or obstruction of some portion of the coronary system, and the probability of sudden syncope from inhibitory influences, or in consequence of mechanical overdistension, or from pressure on the organ, it is very probable that in many of these cases the fatal issue is determined or ensured by the occurrence of fibrillar contraction in the ventricles. Moreover, there is reason to assume that, in a certain number of instances, where none of the above-mentioned causes are present in any marked or dangerous degree, a sudden, unexpected, and irretrievable cardiac failure may, even in the absence of any prominent exciting cause, present itself in the form of an abrupt onset of fibrillar contraction (ventricular delirium). The cardiac pump is thrown out of gear, and the last of its vital energy is dissipated in a violent and prolonged turmoil of fruitless activity in the ventricular walls.¹

AN ANOMALOUS FORM OF ECZEMA.¹

By E. D. MAPOTHER, M.D.,

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LAST January I was consulted about a raw surface involving the right tragus, and the hairless skin in front of it, and at once its likeness to Paget's disease of the mammary areola struck me. It was oval, about $1\frac{1}{2}$ inch vertically and an inch transversely, florid and moist as is the glans penis during balanitis. The patient was a married woman of 40, long troubled with uterine maladies. Referring to my notes, I found records of two very similar cases, unilateral and in females, but of diverse ages—45 and 12. In the latter there was also a small patch a little above the eyebrow. The uniform, florid, oozing surface without granulations, hard and slightly raised, but without the rolled over edge of rodent ulcer, without pain or much itching, stubbornness to treatment, without occasional disappearance, characterised all the cases. Dr. Crocker has observed a like condition on the scrotum.

Some physiological analogies group these regions: in all the sebaceous glands are very large; those round the nipple were, by Bidloo in 1685, described as supplementary mammary glands. The soaking of the skin by the overflow of milk or by the saliva of the infant may be prevented by their oily secretion, and in the scrotum and parotid region a similar waterproofing protection may be afforded against the urine and the sweat falling from the temple respectively. All agree as regions in which the arrival of puberty is manifested. In the female the scanty hair in front of the ear remains of the lanugo kind, and the glands are correspondingly large. The raw surfaces occasionally noticed round the lips, the nostrils, the eyelids, and round the anus are somewhat like, but they are rarely so chronic as Paget's disease, or the condition I note in the parotid region. All the cases healed, a slightly depressed unpigmented cicatrix remaining. Some forms of eczema undoubtedly leave scars, reaching well into the papillary layer. In 1879 Professor McCall Anderson saw with me a girl aged 4, who had somewhat similar raw eczematous patches on one cheek, and on the flexures of both knees and one elbow and ankle. The oozing was excessive, and did not cease for six years after, when rickets of the spine appeared, due probably to the saline flux. Pale, somewhat concave scars endure.

It may be mentioned that Paget's disease of the mammary areola appears to be rare out of England; so say Scotch and American observers; and except a case which I observed in St. Vincent's Hospital, I can find no record of an instance in Dublin. My patient was an Englishwoman. It may be that there is a peculiar microbe which has not been freely imported, nor has found a fit soil. The curative effect of that greatest of parasiticides, mercury, in the cases here noted, supports that probability, as also does the apparent usefulness of exclusion of air. All forms of eczema on the face are obstinate, because of the unavoidable

¹ I have used the term "syncope" in the general sense in which it is often employed, to indicate cardiac failure irrespective of the consideration as to whether the heart's contractions are entirely abolished, or are merely so much enfeebled as to be ineffective.

¹ Read in the Section of Pathology at the Annual Meeting of the British Medical Association held at Glasgow, August, 1888.

access of light and air. The earlier cases I treated by an ointment containing carbolic acid, mercurial ointment, and vaseline; in the latest, that most valuable natural agent, lanolin, was employed as the vehicle; but in all, the surface being so limited, exclusion of air was attained by Seabury and Johnson's rubber plaster carefully adjusted.

ABSTRACT OF PRESIDENTIAL ADDRESS ON DISEASES PREVALENT IN MALTA.

Delivered at the Annual Meeting of the Malta and Mediterranean Branch of the British Medical Association, November 19th, 1888.

BY SURGEON-GENERAL JAMES SINCLAIR.

THE President's address explained the objects of the Association, and congratulated the profession in Malta on being admitted to membership. He acknowledged the energy and perseverance of the two honorary secretaries in establishing this local Branch on a fair footing, and predicted that if to their energy the members added unanimity, the Malta Branch would prove a success; and also pointed out the value of associative labour, and the usefulness of the JOURNAL in checking extravagances, redressing grievances, making known discoveries, and preventing abuses. He alluded to the status of the medical profession at home and in the colonies as a criterion of the public wish for sanitary progress, and impressed upon all the necessity of doing their utmost to raise its influence and authority.

He thanked the army and navy for the large contingent of members they had supplied to the local Branch, and acknowledged the support received from the profession in civil life. He trusted they would highly value the membership of so large and influential an Association, and expressed a hope that the Branch would receive many valuable papers on local subjects from them. He asked for an explanation of the very unusual cases of cerebro-spinal meningitis which occurred early last year in Gozo, just before the cholera appeared in Malta. Were they due to soil pollution, and consequent water contamination? He pointed out that the cases occurred in very cold weather, when the warmth of the shut up houses at night was likely to cause an indraught of ground air. What significance had these cases relatively to the subsequent outbreak of cholera? Doubtless they expressed the insanitary condition of the hamlet. Then the question of diphtheria, which was far too prevalent in Malta, called for attention. Its connection with faulty house drainage in some recent cases which came under the President's notice was referred to; and information was sought as to whether the throat disease of birds had any relation to the disease, particularly when rain water from the roof was used, which might be polluted with the excreta of pigeons, poultry, and other animals.

The great prevalence of hepatic affections in Malta was pointed out, not due to the high temperature and aridity of the summer months, for the admissions were as frequent in the winter, but believed to be parasitic, and due to food. Professor Maclean, at Netley, had pointed out that cases of echinococcus of the liver were more frequent in men from Mediterranean stations than from others. He cited the history of Iceland as a warning to Malta in this respect.

The great subject of cattle plague, which has prevailed here lately, and the serious consequences to the human race of consuming pneumonic or typhoid beef, was a matter of anxious personal interest to all.

Several recent epidemics of milk poisoning among the soldiers was referred to, and the food of the goats and cows exonerated; in one case pus from the teats and udders entering the milk was supposed to be the cause, in another the poisonous symptoms seemed to be due to ptomaines.

The continued fever of Malta had been well worked out of late years, and its distinction from enteric with ulceration of Peyer's glands clearly demonstrated, both at the bedside and in the mortuary. The long duration, the small mortality, the tedious convalescence, the absence of bowel complaints or spots, the arthritic

sequelæ, the liability to relapse, and the persistent anæmia, all marked this fever as a distinct form, not recognised in the present nomenclature. Dr. Bruce had made the subject peculiarly his own, had demonstrated the "micrococcus" in all fatal cases, and would perhaps be able to explain why this fever was quite as prevalent now as before the completion of the drainage and water-works. Anyone who had watched a case of Malta continued fever from its commencement to its end or convalescence must be satisfied it was neither enteric nor malarial, but from its course, which was very prolonged, the condition of the spleen, which was always enlarged, and the anæmia which resulted and which was gradually established, it seemed, in the opinion of some, to be allied to "pernicious anæmia;" the state of the spleen showed that much blood metabolism had taken place there, and the high temperature and long convalescence showed that the thermogenic functions were gravely disturbed; hence the anæmia was all the more marked. In 1884 the troops had 770 cases of fever, of which 23 died; in 1885, 1,082 cases, of which 35 died; in 1886, 813 cases, of which 11 died; and in 1887, 630 cases, of which 17 died. This meant a large amount of suffering, inefficiency, and expense. The average strength was 4,868 during these five years.

The recorded facts of the 1887 cholera epidemic in Malta were reviewed. No new light had been thrown on its origin, mode of introduction, or propagation; no priest, nurse, or doctor contracted the disease or carried it to others, and it was as little infectious there as in India. There were 626 cases, 462 deaths, 164 recoveries; two-thirds of the cases were fatal in twenty-four hours, and the stage of collapse was the most fatal. The troops in infected localities enjoyed perfect immunity because pains were taken to secure to them pure air to breathe, pure water to drink, pure soil, good food, and easy work, as suggested by the Sanitary Commissioners of 1865.

There was no disease so manageable as cholera; cleanliness and pure air frustrated it. Wherever the disease prevailed there was polluted air, polluted water, or polluted soil. He supported the views of Simon and Seaton, who admitted "the specific causation of the disease, yet pointed out that the agent is not so much a poison in itself as a test of the amount of poison already existing in soil, water, and air. When these are pure, the immigration of any number of persons affected with cholera would fail to set up an epidemic."

The attention of the civil medical practitioners was then invited to the great infant mortality of Malta. Several causes were suggested for this fearful waste of human life, as improper food, inattention, ignorance, hereditary disease, marriages among near relations producing degeneration of race, tending to early death of children. The death-rate among children was also alluded to as a very sensitive test of the insanitary condition of the locality. Sanitary instruction should be given in schools. Inquests should be frequent, negligence punished, and crèches established.

Attention was invited to the faulty construction of dwellings, the nuisances existing in villages, the overcrowding of the five fortified cities, the pollution of the land-locked and tideless harbours with sewage, and to other local insanitary conditions. Sanitary Acts should be compulsory in the interests of the community at large, and it should not be in the power of obstructive members of council to procrastinate the execution of hygienic improvements.

He predicted that zymotic diseases would soon become things of the past. The age of our forefathers had disappeared, so had the plague; small-pox was now easily managed; scurvy was merely a question of proper food; cleanliness and free air-currents frustrated cholera; hospital gangrene was unknown and puerperal fever rare.

The bacteriological experiments and water analyses of Surgeons Bruce and Caruana Scicluna were mentioned as deserving of praise, and they would no doubt be detailed later on by these gentlemen.

The rules for the conduct of business were laid down, the meeting thanked for their attention, and every success wished to the Malta and Mediterranean Branch of the British Medical Association.

CANARY ISLANDS.—The quarantine imposed at Lisbon on vessels from the Canary Islands has been removed, except as regards Palma, the island 150 miles westward of the group, where the sickness occurred. The mail steamers of the Castle Line have commenced to call at Grand Canary on both voyages.