ordinarily understood, nor is there endocarditis, but the whole heart is swollen, for a time hyper-vascular, infiltrated with exudations, and its muscle enfeebled, and after a limited period, which may be even as short as 24 hours, there is rapid absorption of exudation and a restoration to the normal. There are successive storms of rheumatism in the heart as in the joints.

From collateral evidence I think it probable that disturbances of the nervous mechanism of the heart are causally associated with these phenomena. I have observed an acute dilatation of the heart with rapid subsidence occur with signs that indicated neuritis of the vagus. In this case the cause was not rheumatism. I do not suggest that rheumatism ever induces neuritis of the vagus or any morbid affection of its central parts. I have no experience that the disease, uncomplicated, influences these structures, yet I think it highly probable that just as in some cases of pericarditis the sensory disturbances and the perversions of the cerebral mechanism are reflex and due to a morbid irritation of the sub-pericardial nerves, so in the swollen heart the acute dilatation is due to a temporary irritation of all the local nerve structures of the heart and pericardium. For many reasons I believe that the hypothesis of any direct weakening of the cardiac muscle, any form of myocarditis, is inadmissible.

TREATMENT OF THE SWOLLEN AND DILATED HEART OF RHEUMATISM.

In the first place I consider that the treatment by the salicylates should be continued and even the frequency of administration of the doses should be increased or be as in the early stages of the treatment of acute rheumatism. The icebag to the præcordium may also be applied or re-applied. In fact, in these points the treatment should be as for rheumatic pericarditis. It must, however, be remembered that on many occasions the case may put on a very grave aspect, and the patient may be in immediate peril. In such case I am emboldened to say that I have never seen any good results from the administration of digitalis (or digitalin) and I think I may say from experience of the past that I have sometimes seen much to regret from its employment. Sir T. Lauder Brunton and Dr. Cash have shown that digitalis does not manifest its usual good effects upon the heart muscle when there are conditions of pyrexia.⁶ My experience from a clinical point of view confirms this statement. So also, according to my own observations, the drug fails to exercise its tonic power on the heart muscle (although it may induce vomiting and other toxic symptoms) when the structures are infiltrated with morbid exudations.

Failing cardiac power is best treated by the frequent administration of ammonia and similar diffusible stimulants in small doses with camphor water or by musk in from three to five-grain doses, or tincture of sumbul in 20-minim doses in camphor water, or by hypodermic injection of one-fiftieth or one-thirtieth of a grain of strychnine (sulphate, hydrochloride, or nitrate).

EMPLOYMENT OF THE CONTINUOUS GALVANIC CURRENT IN THE AREAS OF THE VAGI.

I have had considerable evidence to show that this may be a valuable agency in the treatment of the rheumatic heart in its more severe manifestations. For instance, in a case of extreme severity in which I observed recurring enlargements of heart and extremely critical symptoms I adopted in addition to the salicylate treatment the administration of the constant galvanic current from eight cells to the course of each vagus nerve for six minutes three times daily. The anode—a flat metallic plate covered with soft tissue and moistened with hot water—was applied over the nape of the neck, and the cathode—a metallic tissue-covered button similarly moistened—was pressed over the skin of the neck outside the larynx and trachea, or moved slowly up and down from the mastoid process to the clavicle on the right and the left sides alternately. The patient made a most satisfactory recovery. The dilatations of the heart subsided to the normal, the subjective symptoms passed away, and the patient returned to the active duties of life, although there was a murmur of aortic regurgitation. I have seen him, more than 12 months after his illness, hale and strong and oblivious of any imperfection in his heart-valves, and indeed such imperfection is but very slight. I have observed good results in several other cases thus treated, but I cannot, of course, claim for this mode of treatment the efficacy that I

have considered to be established in regard to the other therapeutic measures I have mentioned. It is yet *sub judice*.

RHEUMATIC DISEASE OF THE VALVES OF THE HEART.

I have written down my experience which tends to show that the morbid changes in the pericardium and in and about the muscular structures of the heart often occur insidiously and are not betrayed by characteristic symptoms. I assert this still more strongly of rheumatic affections of the valves. In the pronounced rheumatic storms affecting the heart, when there is pericarditis or the swollen heart of rheumatism, it is common, though not invariable, for the endocardium and the valves to be involved. In such case the area of lining membrane of the heart being so extensively diseased, the morbid changes occur chiefly in the mitral valve, the chordæ tendineæ, the muscoli papillares, and all the structures in the neighbourhood of the valve, and the result is usually mitral incompetence.

The patient departs from our observation with the systolic murmur of mitral regurgitation and resulting changes which may be compensatory in the left auricle and the two ventricles. But even in a case like this there may be a fallacy. I have known cases in which an apical systolic murmur was manifested during and after pericarditis so that exceedingly good observers had no doubt that there was mitral valvulitis with incompetence and yet the necropsy showed pericarditis only with no involvement of the mitral valve in disease. In such cases I believe the murmur to have been due to an enfeeblement of the heart muscle and especially of the papillary muscles. If there had been a recovery from the pericarditis the murmur and all physical signs of mitral regurgitation would have passed away. In many cases, however, the patient who has suffered from acute rheumatism goes away from our observation apparently recovered. Perhaps the last notes taken state that the physical signs in regard to the heart are normal—the sounds well-pronounced and no murmurs. Yet when the patient comes under observation again after the lapse of some months—no rheumatic symptoms having been manifested in the interval—there is unmistakable evidence of mitral regurgitation. The disease processes in the valve and surrounding structures have been long drawn out, slow, insidious, and unmarked by symptoms. By no means infrequently the very period of commencement of the disease has not been betrayed by any symptom whatever.

When there are any signs, physical or rational, which lead to the diagnosis of endocarditis during acute or sub-acute rheumatism I find no reason to modify the treatment by salicylates, by icebag, &c., which I have already described. After the patient has entered into convalescence, however, much may occur to induce or to increase disease in the valvular structures of the heart without the patient being aware that any disease is in process. It follows, first, that a very guarded opinion should be given as to the presence of valvular disease in rheumatic subjects; secondly, that a patient who is the subject of rheumatism should be induced to submit himself to physical examination at fairly frequent intervals, notwithstanding the absence of symptoms. Then come the questions of hygiene and general management in these cases, for medicinal treatment is probably of far less importance than these.

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ON THE ABORTIVE TREATMENT OF SUPPURATION OF THE EYEBALL.

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I WISH in this short note to direct attention to a mode of treating suppuration of the eyeball which is not as widely known, judging by the text-books, as in my opinion it merits.

In a large ophthalmic clinic suppuration of the globe is by no means infrequently met with. It is due to sepsis, but the immediate cause may be very varied. Amongst the causes may be mentioned penetrating wounds of the globe with or without the lodgment of a foreign body, abrasions and wounds of the cornea, either accidental or the result of operation, burns of the cornea, &c. Pan-ophthalmitis may

⁶ Address on the Connexion between Chemical Constitution and Physiological Action. Brit. Med. Jour., Aug. 14th, 1886, p. 329.

also be due to metastasis from a variety of conditions. The clinical picture of suppuration of the eyeball is characteristic. There are considerable swelling of the lids, enlargement and protrusion of the globe, and swelling of the conjunctiva. In cases arising from metastasis the cornea would be clear and a yellowish appearance denoting the deposit of lymph in the vitreous cavity would have been visible at an earlier period than that just depicted. The pain is most acute and long continued and the condition may be regarded as lasting for at least from four to six weeks.

To relieve pain and to cut short the disease are the ends to which treatment should be directed. In the opinion of many enucleation of the globe is not admissible and it is almost entirely in such cases that the fatal instances associated with excision of the eye have occurred. It was laid down long ago by Von Graefe that the excision of suppurating eyes should be avoided owing to the likelihood of meningitis ensuing. The report of the committee of the Ophthalmological Society (1898) which was appointed to consider the relative values of simple excision of the eyeball and of the operations which have been substituted for it, showed the danger of excision in this condition, but in the large numbers dealt with it would nevertheless appear to be, comparatively speaking, of very infrequent occurrence. It has been held by some that the careful use of antiseptics at the time of operation and afterwards would obviate the danger alluded to. I am hardly, however, of this opinion. For many years antiseptics have been carefully used, as a matter of routine, in my practice in all cases of enucleation, but I have not felt that their employment has given me such a sense of security that I should, if other means are available, excise a suppurating globe, especially when the weight of opinion is strongly against such a course.

A better and safer plan, in my opinion, is to deal with the eye on general surgical principles. An abscess elsewhere would be opened and drained and a similar condition affecting the globe should be treated in like manner. I hardly think that this principle has been, up to now, sufficiently appreciated. Text-books—at least some of them—it is true, make mention of incising the cornea or sclerotic and refer, often vaguely, to evisceration in the treatment of suppuration of the eyeball. The plan here advocated is, however, definite both in procedure and in the results which it affords. It is not an evisceration in the sense that Mules's operation is, for no glass globe is inserted into the scleral cavity. It is more like the procedure advocated by Noyes, Von Graefe, and Bunge, and called by some "exenteration," but it will be observed that no stitches are inserted into the sclerotic and it may be that their non-use has been a reason for the absence of the excessive reaction and the prolonged stay in hospital which have been mentioned by some operators.

I have notes before me of suppuration of the eyeball occurring in the following conditions in which the operation has been done: (1) after ulceration of the cornea; (2) wound of the cornea (in a young girl); (3) after cataract extraction, with lacrymal obstruction; (4) wound of the cornea by a piece of coal; (5) suppuration of the cornea, after injury from blasting; (6) foreign body in the eye; and (7) wound of the sclerotic by a hat-pin. I have, however, done this operation for many years and therefore the total number of instances would be a large one. In all these cases the plan adopted was as follows. Ether having been administered, the cornea, unless it is already destroyed, is divided across by a cataract or Beer's knife. The next step is to remove the remains of the cornea up to the sclerotic, and this can be well done with scissors. Some of the contents of the globe may have escaped by this time, and the remainder, consisting of thickened half-gelatinous-looking masses, can be drawn out with forceps. After removal of these portions, which are readily taken hold of by forceps, Mules's scoop may be used to aid further in the cleaning of the interior of the globe or cotton-wool and forceps can be employed to wipe out the contents. Lastly, sublimate solution is freely syringed into the eye cavity until all the contents have been removed or washed away and only the bared sclerotic remains. Gauze is lightly packed into the eyeball and a bandage is applied. Almost immediate relief from pain follows the operation, with no return, and the swelling of the orbital tissues gradually subsides. The dressings are changed on the night of the operation, and during the next few days the eye is syringed twice a day and the gauze is re-applied. For about the first three days there is some discharge, after that practically none.

The patient is even then better than he would have been at the end of some weeks if the disease had been otherwise treated. He will, as a rule, be fit to leave the wards in about 14 days. Ultimately a small button is left in the orbit, which is a better foundation for the adaptation of an artificial eye than if enucleation had been performed. I have seen no ill results follow the operation nor should I apprehend them. It is notorious that sympathetic ophthalmitis does not follow suppuration of the globe, and the procedure here advocated forestalls the completion of this condition. In one case some sloughing of the sclerotic occurred but it did not do more than somewhat delay recovery.

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A CASE OF LYMPHATIC LEUKÆMIA.

BY M. H. SPENCER, M.D. CANTAB.

THE following case seems to be worthy of record on account of the comparative rarity of the affection.

The patient was a tall, well-made man, aged 38 years, who had led a healthy life and had been accustomed to athletic exercises. There was no previous history of malaria or of any other serious illness. In August, 1899, he complained of pain and tenderness in the right heel which interfered with walking. At this time he appeared otherwise to be in perfect health. The pain about the heel soon passed off, but returned again in the autumn, and a physician who saw him, regarding the symptom as a gouty one, placed him upon a somewhat restricted diet. Towards the end of November he began to feel a little poorly, but was able to play golf and follow his usual pursuits. On Dec. 11th I was called in to see him and found him complaining of pain in the left side of the chest and in the left supra-scapular and infra-costal regions. On the previous day he had been driving in a dogcart and as he felt cold he got out and tried to run for some distance, but was unable to do so on account of shortness of breath and a feeling of exhaustion.

Examination revealed no abnormal signs over the heart or lungs. The spleen was considerably enlarged, reaching nearly to the umbilicus, and was rather tender. The liver was also enlarged and was palpable for the breadth of two fingers below the ribs. No enlargement of the lymphatic glands was detected. The urine was loaded with urates but was free from albumin. There was well-marked anæmia. A rough examination of the blood showed an excess of lymphocytes. The pain in the left side which had been first complained of soon disappeared, but the patient developed a troublesome dry cough which kept him awake at night and caused pain in the splenic region. The anæmia increased in intensity, he became very breathless on slight exertion, and rapidly lost strength.

On Dec. 30th an ophthalmoscopic examination revealed numerous blotchy hæmorrhages in both retinæ with some fluffy white patches. There were no marked broadening of the vessels or orange tint of the fundus and no optic neuritis. The temperature soon began to rise at night falling to normal or subnormal in the morning. This type of temperature was maintained until the end. By Jan. 14th, 1900, the weakness had greatly increased and the pallor was intense. There was no dyspnoea whilst the patient was at rest, but he was extremely breathless on the slightest exertion. There was now some enlargement of lymphatic glands in both groins and a few, of about the size of a filbert, could be felt in the axillæ and in the posterior triangles of the neck. Subconjunctival hæmorrhages had occurred in both eyes, but there was no bleeding from the gums or from the stomach or bowels. The gums were pale and slightly spongy and were retracted from the teeth, but the marked gingivitis described in some cases of lymphatic leukæmia was not present. There was tenderness on pressure along the anterior surfaces of the tibiæ and over the manubrium sterni. At night the patient suffered from profuse perspirations and the cough continued, causing at times troublesome retching. In the absence of any physical signs over the lungs it was thought that this dry cough might be due to pressure from enlarged bronchial glands. On Jan. 18th Dr. Louis Jenner, who kindly examined the blood, made the following report: "Without counting it is obvious that the white cells are greatly in excess of normal."