to reduce the quantity used. This seems to me to be a practical point of some moment; for many men would willingly reduce their smoking, and use very mild tobacco, whereas stopping it entirely would be the greatest possible hardship.

Of the limited number of cases which I have collected, many continued to smoke a little, and made an equally good recovery. The quantity smoked in the first instance was very rarely less than half an ounce a day, and a very strong form of tobacco was used. Six patients chewed as well.

4. *Treatment*.—It is usually the practice to give strychnia internally. This was done in twenty-eight cases; but patients seemed to make an equally good recovery when smoking was diminished alone. Dr. Galezowski states, in his monograph on *Toxic Amblyopia*, that workers in tobacco-manufactories suffer from loss of sight as in smokers. By the kindness of Messrs. Cope Brothers, of this city, I was allowed to go over their large tobacco-manufactory, and make any inquiries I thought necessary of their workpeople. About 1,200 men and women are engaged in the works; and I made careful inquiries of the foremen of the different departments. In no instance had any of them suffered from failure of vision, nor had such a case ever come under their notice. Many of the men had been over ten years in Messrs. Cope's employ. No amblyopia was produced by the absorption of tobacco-dust, as described by Galezowski. Mr. Charles Lee, one of our assistant-surgeons, kindly made similar investigations for me at a large tobacco-manufactory in Chester, and here, again, loss of sight from contact with tobacco was unknown.

If I may be allowed to draw any conclusions from the stated experience of our surgeons, and the cases I have been able to bring forward, they would be these:

a. Atrophy of the optic nerves is very rarely met with as the result of excessive smoking.

b. Tobacco is the essential agent in producing the failure of sight.

c. Great moderation in smoking, and especially the employment of mild forms of tobacco, is all that is necessary to ensure recovery.

In the great majority of the cases, no diminution in the peripheral field of vision was found. In twelve only were careful observations made with regard to a central defect in the visual field; and, of these twelve, six cases were found having well marked "central scotomata."

ARSENIC IN GASTRIC ULCER.

By JOHN STRAHAN, M.D., M.Ch., Belfast.

THREE cases of gastric ulcer occurring in my practice within the last three years, each ending in recovery in an unusually short time, and each occurring in the most dangerous class of subject—viz., a young woman—may illustrate the efficiency of a modern plan of treatment not enough known or practised in this country. Dr. S. Ringer certainly mentions arsenic as being more useful than the generally employed remedies, but does not recommend it in so hearty a way as to lead the profession to make trial of it. The American physicians are, however, using it very freely and with great success, not only in gastric ulcer, but in chronic gastritis, cancer of the stomach, and the various forms of intestinal indigestion, ileo-colitis, etc.

CASE I.—The first case in which I tried this plan came under observation about three years ago. The patient was aged 25, a female, unmarried, housekeeper to a widower father, and had been ill for two years. She was very much emaciated, and complained of all the symptoms usual in such cases—viz., localised pain in the epigastrium, of a gnawing, boring character, shooting straight through to the back between the shoulders, where a very tender spot existed on the spine rather below the angle of the scapula. The seat of pain in the epigastrium was also extremely tender to pressure. The pain was greatly increased by hot or stimulating articles of diet, and indeed by any food; the pain continuing until vomiting occurred, with great relief. There were also severe attacks of gastralgia radiating from the tender spot all over the epigastrium, which caused great distress at intervals, also acid pyrosis. The most diagnostic symptom, however, was hæmatemesis, which had occurred to a moderate extent three different times. There had been scanty menstruation, and latterly amenorrhœa, from the severe anæmia present.

She had been under the care of several competent medical men, and, lastly, under that of the late Dr. Thompson, one of the most distinguished men in the north of Ireland. He treated her with from quarter to half grain doses of nitrate of silver with a grain of opium in pill for some time, and then with large doses of bismuth, with opium and counter-irritation to the epigastrium. While under this treatment, she improved a good deal, but a few weeks after stopping the

medicines she became as bad as ever; for some time, therefore, she had abandoned all treatment, thinking it useless. She came to me without the least hope of benefit, and merely to please a relative, an old nurse in the fever-hospital, whom I had known when house-physician there. I immediately put her upon regular milk-diet (four ounces every four hours), with lime-water, regulated the bowels with a simple aloes-pill at night, applied a small blister (the size of a penny) to the tender spot on the epigastrium, and gave her one drop of Fowler's solution, on an empty stomach, four times daily. She returned in a week much improved in every way. The vomiting had almost ceased; the pain was very much less, and she had gained a little colour. The treatment was continued for a month, when she was almost well. All the symptoms had ceased, and she was wonderfully improved in flesh. The arsenic had evidently also cured the anæmia. She continued the medicine a little longer, and was ordered to be very careful about her diet for some time. She has remained quite well ever since.

CASE II.—The second case was a girl aged 20, engaged in a linen-warehouse, unmarried, and of a very full habit, but lymphatic in temperament. When I was called to this case, the friends supposed her dead from vomiting of blood. She was in a severe state of syncope from a dreadful hæmatemesis, which had occurred without a moment's warning. After recovering her from the syncope by the usual means, brandy, the head low, ammonia to the nostrils, etc., I gave her ice and a large dose of gallic acid to guard against renewed hæmorrhage, which would probably have proved fatal. She was so utterly exhausted that I made no further examination that day, except to gently ascertain the absence of phthisis. In a few days, as there did not appear any symptoms of perforation, I made an examination, and completed the diagnosis of gastric ulcer, by finding localised pain and tenderness, with pain in the lower dorsal spine, and ascertaining that she had been troubled with more or less vomiting after meals, although otherwise in good health.

She was treated exactly as the first case, and with exactly the same result. She had to stay in bed a fortnight from debility, but, at the end of that time, she demanded an addition to the milk-diet on account of increased appetite. She was allowed all kinds of farinaceous articles in the fluid or semi-solid state. I added ten grains of ammonio-citrate of iron to each dose, as the anæmia was extreme. In another fortnight, she was quite well, was cautioned as to her diet, and remains well up till the present time (eight months).

CASE III.—The third case occurred about six months ago, in the person of a girl aged 18, a housemaid, who had been ailing for some time. She was becoming thin and anæmic, the menses scanty, and vomiting more or less after meals, so that her mistress first suspected pregnancy, and then consumption. This case was rather more latent than either of the others, as there had been no hæmatemesis. But there was no difficulty in diagnosing gastric ulcer, as on cross-examination I ascertained that the menses had never quite ceased, and that she had noticed "coffee-grounds" in the vomit several times. I was fortunate enough to see some of this for myself, when there was no difficulty in recognising altered blood. The lungs were healthy; the pain and tenderness in the epigastrium and in the back were very marked. Hence, taking the case as a whole, no doubt could exist as to the diagnosis. There was great constipation; and, as she could not swallow pills, I added sixty grains of sulphate of soda to each dose of arsenic. This regulated the bowels, and did not seem to interfere in the slightest with the soothing and cicatrising powers of the arsenic. The diet was regulated as before. In this case, the pain and vomiting stopped at once; there was no further appearance of coffee-grounds; she gained colour fast (she was in good flesh all along), and in three weeks was almost well. As she had a great antipathy to medicine in any shape, she now refused to take any more, and in another fortnight she was as bad as ever. The ulcer had evidently not been completely cicatrised. She was put on the same mixture again, and kept on it for a month, when she seemed quite well, and was allowed to try herself without medicine. Of course, for some time afterwards, her diet was confined to milk, all farinaceous articles in the semi-solid state, and white fish. She was denied all condiments, alcohol in any shape, sugar, meat, and anything quite solid, or anything hot. As she continued well at the end of another month, she gradually returned to her usual diet; she continues well up to the present time.

REMARKS.—It may be said that the improvement in the above cases resulted from regulation of the diet; but we know that milk-diet alone will not cure ulcer of the stomach so quickly, if at all. Besides, the first case had been put upon milk-diet several times before, and blistered several times before, so that she was rather unwilling to submit to my treatment at all, thinking she was just going to have the old treatment all over again. Of course, it is essential to regulate the

diet, as no one could hope to cure a gastric ulcer while irritating food was continued. But, making all due allowance for the great improvement which always follows the regulation of the diet, I think the treatment by small doses of arsenic gives results to be obtained by no other mode of treatment. More than, at the outside, two drops should never be given, as the irritating action would then commence, to the injury of the patient. By an action on the end organs of the gastric nerves, small doses relieve the pain wonderfully, and improve the general tone of the gastric mucous membrane, curing the gastric catarrh which exists at least in the immediate neighbourhood of the ulcer, and thus relieving the patient of the vomiting of mucus, which is sometimes an important feature of the case. We also know that a weak solution of arsenic will, out of the body, heal unhealthy ulceration, *e.g.*, onychia, or even when given internally, so that it is not strange that it should act locally as a cicatrising agent on a gastric ulcer. Nitrate of silver, the next best remedy, recommended by such men as H. C. Wood, Da Costa, and Wilson Fox, is not nearly so efficacious, either in relieving the pain or in promoting cicatrization. Indeed, in all gastric and intestinal affections in which nitrate of silver is so much recommended, and is so successful, I believe that the small dose of arsenic is far more valuable, and it is certainly far more convenient. Bismuth is highly recommended by Brinton and many high authorities, but it has been recently said that it very often owes its powers as a sedative to the stomach, to a trace of arsenic which it contains.

Some people are sceptical as to the reality of the cure in a case of gastric ulcer; there is no ground for this, for, although many ulcers continue open for periods of from four to thirty years, that occurs probably in absence of proper treatment. Besides, Brinton estimates that a cure takes place in about one-half of the cases which occur. This estimate is based on the number of instances of cicatrised ulcer found in *post mortem* examinations. It is also a more common disease than is generally believed. Dr. Brinton's researches show that it is found after death in an average of 5 per cent. of persons dying from all causes. Jaksch, quoted by Niemeyer, found, in 2,330 necropsies, ulcer in 57, and cicatrices denoting ulcers which had healed in 56; making the ratio of an ulcer, either existing or having existed, as one to every twenty subjects. My cases, too, were of the most dangerous sort, as they all occurred in young women; and it is in young women that perforation, with all its consequences—collapse, peritonitis, or abscess in the abdomen—is most liable to occur.

Perforation is most liable to occur when the ulcer is situated on the anterior surface of the stomach, as adhesions cannot so easily form between the stomach and the anterior abdominal wall as they can in other situations; but, as I diagnosed the ulcers in all of my cases to be situated on the posterior wall (on account of the pain darting straight through to the back), I was not uneasy about this danger, and did not confine the patients to bed, or hinder them from following their usual occupation, except in one case where the patient had to remain in bed on account of debility from hæmatemesis. When an improvement in the symptoms renders it probable that the ulcer is healing, great care in diet is important to prevent a relapse; and it is to be borne in mind that remissions are apt to take place, followed by a renewal of all the symptoms. Care is necessary for some time after the healing appears to have been completed; the patient is not to be considered as altogether safe for a year or two after apparent recovery, as the cicatricial tissue by which the ulcer is closed is of lower vitality than the mucous membrane generally, and in the case of lowered health from any cause, or the occurrence of chronic gastric catarrh, the ulcer is very liable to reopen; perhaps by the cicatrix being digested off by the gastric juice, should it become lowered in vitality by congestion or other cause.

Why young women should be so liable to the perforating form of ulcer, still remains unknown. It has been conjectured that the anæmia common at that period may stand in some relation to it, or affections of the endocardium, as no doubt the immediate cause of ulcer is usually embolism or thrombosis of a small gastric arterial twig, or even capillary, causing necrosis of the mucous membrane, or of the whole coats of the stomach within the space nourished by the obstructed branch, the gastric juice then digesting the affected part off. Small ecchymoses within and beneath the mucous membrane might act in the same way. Still, we cannot account for the fact that females are more liable to ulcer, in the proportion of two to one.

THE Epsom Guardians have, with the sanction of the Local Government Board, increased the salary of Mr. Allan MacLean, Medical Officer for the Leatherhead and Fetcham District, from £50 to £65 a year.

A FEW REMARKS ON HAY-FEVER.

By WM. S. PAGET, M.D. Lond., M.R.C.P., Great Crosby, Liverpool.

I READ with much interest the lecture on hay-fever by Dr. Morell Mackenzie, in the JOURNAL of May 17th; as I have myself been a sufferer from the complaint for the past six summers, the susceptibility to it, in my case, somewhat curiously, having only arisen since coming to reside in a seaside locality, peculiarly destitute of vegetation. I suppose it is now a tolerably well established fact that the pollen of the *Graminaceæ* is the active agent in producing the symptoms of the disease. I believe, however, that when once the complaint has set in, inhaling the perfume of almost any flower in full bloom will evoke an attack; at least, I have found this to be so in my own case.

Although the flowering grasses are the noxious agents, there are other factors (alluded to by Dr. Mackenzie) of such great importance, that they ought to receive due attention, influencing, as they do very materially, the course of the disease, and affording suggestions as to its successful treatment; of these influences, I have generally considered intense heat, bright light, and east wind, as the most potent. With reference to east wind, I remember well that, six years ago, when my first attack occurred, the wind, during the whole hay-season, never shifted from the east or south-east, the weather being glaring and sultry; victims to the disease suffered greatly during that summer. Here, on the west coast, when the wind blows from the sea, I enjoy comparative immunity; the ready explanation of this of course is that, when it blows from the opposite quarter (easterly land breeze), the pollen is wafted down towards the shore from the country districts. No doubt this is, in great measure, the true explanation, but it does not cover the whole question, for I have noticed this peculiar fact, that even when I have driven up into the heart of the country, and have been surrounded on all sides by hay-fields in full flower, if the atmosphere be bright and clear, with a west wind, I have scarcely suffered at all. Consequently, one is driven to the conclusion that there is something specially noxious about the east wind during the hay-season, as well as at other times of the year.

With reference to bright light, every sufferer knows what an immense relief it is when the sky is overcast. Not that light alone can produce the disease, but, when once it has set in, the supersensitive conjunctiva is easily irritated by bright light, and the complaint materially aggravated. So, again, intense heat, especially if combined with glaring light, intensifies the suffering, particularly when the body is prostrated by over-fatigue.

With reference to treatment, I am afraid I am somewhat sceptical as to any specific internal remedy, though one would naturally expect a good result from some of the nervine tonics. I have tried most of them, but it is difficult to estimate their relative value. It is, no doubt, however, exceedingly important to have the general bodily condition at its best. Unfortunately, just as the hay-season comes on, most of the educated classes (and it is among these we chiefly find the complaint) are run down by a year's hard work, have had no holiday, have passed through the trying influences of spring, and consequently their resisting power is below par, and they are prone to suffer severely, unless they can get right away to sea for a holiday.

With regard to local measures, I attach the greatest importance to the protection of the eyes. In my own case, as well as in those of many with whom I have conversed, conjunctival irritation, especially intense itching at the inner canthus, precedes, as a rule, by some days, the nasal irritation; consequently, by wearing goggles or a veil, as suggested by Dr. Mackenzie, whenever out of doors, and commencing their use early, before the disease has developed, a great point is gained. The comforting, cooling effect, not only to the eyes, but to the whole surface of the body, can hardly be overestimated. By this means, not only are the eyes shielded from pollen, dust, and wind, but also from the glare and heat.

It is also of great importance not to get the body overheated, if possible, as an aggravated attack almost always supervenes upon severe physical exertion; therefore everything should be done as leisurely as possible.

With regard to local applications to the eyes, I have found the greatest relief from very gentle sponging, either with tepid water or a tepid lotion of zinc, morphia, and hydrocyanic acid. I think cold applications should be avoided; for, though they give great comfort at the time, they lead to a disagreeable reaction afterwards. When the nasal irritation is great, I find inhaling a mixture of equal parts of carbolic acid and liquor ammoniæ very grateful. It is best to saturate a piece of sponge in this mixture, and keep it in a stoppered bottle, and inhale frequently. When the nose is much clogged, the employ-