but getting worse refused to remain. He had an attack of partial dimness, complained much of accommodative asthenopia, and the pupils were larger than in health. There was a small diffused ecchymosis on the sclerotic of the right eye.

Whatever may be the precise explanation of such cases as the above, the association of the eye-symptoms with serious heart-disease makes it a matter of some clinical interest to distinguish between them and some of the more trivial affections.

From cases of dimness due to variations of accommodation the heart cases are as a rule, easy to diagnose. This accommodative failure generally occurs from overuse of eyes which are optically defective (usually hypermetropic) and need spectacles, and it is seldom asymmetrical. But it must be admitted that in the accommodative cases, and in some few others, *e.g.*, some cases of threatened glaucoma, the distinction cannot always be drawn so easily as would be expected on theoretical grounds. But the cases of megrim blindness are, I think, those in which the distinction is of the greatest importance and at the same time most difficult to draw.

It is well known that certain of the subjects of megrim are liable to a very peculiar affection of sight, in which a part of the field of vision becomes obscured by a flickering or waving cloud, the edges of which in many persons are sharply defined, serrated, and brilliantly coloured.

With an intelligent patient, there could be no difficulty in distinguishing between the *momentary* obscuration of the *whole* visual field of *one* eye which characterises the cardiac cases, and the *gradual though rapid* flickering or quivering cloud, beginning at one spot and spreading in the course of minutes over something like half the field of vision, affecting both eyes, and distinguishable even when the eyes are shut, which marks the amblyopia of megrim. But many who are clearly the subjects of megrim amblyopia do not give so definite an account as the above, often no doubt because they do not observe well. In such cases, the differential diagnosis may be difficult, particularly as a liability to severe headaches and to coldness of the extremities is equally common in the cardiac as the megrim patients.* But even here it may be noted that, when megrim patients are liable to both amblyopia and headache, the latter usually follows the eye-symptoms and that vomiting is a common climax to the attack; whilst in the heart cases vomiting is not usual, and the headache generally precedes the blindness, and continues after it has passed off. No very useful distinction can be drawn between the two groups in respect to age, although, according to Allbutt,† some of the best marked cases of ocular megrim are seen rather late in life, whilst the heart patients are often young. I think it open to question whether some cases of permanent, supervening on repeated transient, blindness in connection with headaches, and which have been attributed to megrim, have not really belonged to the cardiac group.‡

In trying to account for the symptoms in my two cases, I had entirely forgotten that Dr. Loring, in 1874,§ had offered the same explanation as the one which had occurred to me and that he had indeed developed the hypothesis at some length.¶ It must be added that Dr. Knapp, more than ten years ago,|| recorded some cases of his own, and referred to one by Moos, which evidently belonged to the same group as these I have read, but, in which the occurrence of repeated embolisms of some of the *choroidal* arteries was thought to furnish the best explanation, the nutrition of the corresponding part of the retina suffering quickly in consequence.

It needs, indeed, but slight reflection to see that the embolic and thrombotic processes, which have been proved to occur in the ophthalmic vessels are able to give very different results according to the position, size, and permanence of the obstruction, and also according to the

precise relations to one another, and mode of branching of the central retinal vein and artery as they run in the stem of the optic nerve; and, in suggesting that disease of the coats of the ophthalmic or of the central retinal artery may, when it occurs in conjunction with aortic or mitral disease, sometimes cause transient stagnation of the retinal circulation, I would claim for it no more than its due share as one factor in the important clinical family of blindness from vascular blockage.

ARSENICAL WALL-PAPER POISONING.

By JABEZ HOGG, M.R.C.S. Eng.,
Consulting Surgeon to the Royal Westminster Ophthalmic Hospital.

ON the 7th of April, I read a paper at the Medical Society of London,* on Inflammation of the Eye and Injuries to Health by Arsenical Wall-paper Poisoning. Since that time, I have met with several typical cases of wall-paper poisoning of considerable interest, the publication of which will, I believe, have the effect of stimulating further inquiry into an important question of hygiene.

CASE 1. *Fainting, Sickness, Cramps, and other alarming symptoms of Acute Poisoning.*—The following interesting and remarkable case forcibly illustrates the rapidity with which the poison may be absorbed by one who is susceptible to its influence. In my opinion, the acute nature of the symptoms experienced by the patient were mainly due to a saturated atmosphere of arsenuretted hydrogen, arsenical dust being of a less diffusible nature. The humid state of the surrounding air, which was at the same time the subject of remark, possibly facilitated the evolution of the poisonous gas; and the several causes, combined together with the overheated state of the room, from a desire to make the visitor as comfortable as possible, brought about the alarming form of illness I am about to narrate. I may further remark that, as I am anxious not to weaken the tersely graphic account of the seizure with which Mr. E. H. Corbould has furnished me, I need, I am sure, offer no apology to this gentleman for relating the history and symptoms of his case in his own words.

"I was summoned", he says, "a few years ago, to Osborne, to execute a particular work in a very short space of time; and it therefore became necessary to lodge and sleep as near as possible to the Palace, in order that I might resume my work early, and leave it late. To enable me to do this, I took a room at the nearest hotel. In a day or two, I began to feel ill, and found I was suffering from all the symptoms of a severe cold. This I attributed to the damp state of the walls of the bedroom in which I slept, the paper of which was much discoloured by the action of the damp. Her Majesty, on hearing of this, in her most graciously considerate way, gave instructions that I should at once be lodged at the Victoria Cottage, just outside Osborne, and that a fire should be lighted in the bedroom some hours before I took possession of it; in short, that I was to be made as comfortable as the palace could make me. The result was that at night I found the room exceedingly cosy. The bed was everything a gentleman could desire. It was well covered with Witney blankets of the newest and the best kind; and I was informed by the servant that, in the event of my requiring more, I should find a couple of thicker blankets folded at the foot of the bed. When, however, I felt the quality of those on the bed, and which were like so many good sheepskins, I said it was not very likely that I should require the extra ones. The room, too, felt deliciously warm in every part. I soon got into bed, but had not been there many minutes when a coldness seized me. I was soon obliged to resort to the blanket reserve at the bottom of the bed, and, dragging forth one, I threw it over me, and once more tried to settle myself down to sleep. I still, however, felt very chilly, and in a few minutes was glad to seize the other blanket, and fold it double over my legs. Withal, I could not get warm, and my teeth chattered; and I resolved to try the effect of a large and well-lined Spanish cloak which I had thrown over a chair near the bed. I made an effort to raise myself in bed, but, to my horror, found I had not strength enough left to move my legs and get out. The effort produced a violent pain of my bowels. I felt for a moment as if some one were twisting them, just as you might take a jack-towel between your hands, and wring it out. The severe pain was followed by a dreadful sickness; and, during the paroxysm, I must have fainted, and from sheer exhaustion fallen asleep, for I remember no more of what passed. At eight o'clock in the morning, the servant knocked at the door and awoke me out of a deep sleep, and in a feeble voice I called to her to bring me a cup of tea. In about ten minutes, she returned with it, and then for the first time I opened my eyes; and, seeing a very brilliant green wall-paper before me, I excitedly exclaimed, 'Why, it's arsenic!' The girl was surprised, and, innocently

* Some difficulty may arise in distinguishing the heart cases from the "epileptiform defects of sight", described by Dr. Hughlings Jackson. The latter, however, whether consisting in subjective sensations of colour or in loss of sight, appear to be symmetrical, and this will serve to distinguish them even if there be no other epileptic symptoms.

† *Brit. and For. Med. Chir. Rev.*, April 1874.

‡ See, *e.g.*, a case published by Mr. Hutchinson in connection with xanthelasma and sick headaches. There is no note of the heart; but the man had had rheumatic fever several times, and extreme diminution of the retinal arteries, with white atrophy of the disc, are noted in the eye which had become permanently blind.—*Ophthalmic Hospital Reports*, viii, p. 36.

§ *American Journal of Medical Science*, April 1874.

|| "May not the trouble", says Loring, "have been caused by some morbid local process producing a stasis of blood at the spot", *i.e.*, in some part of the central retinal vessels (p. 319). Again (p. 323), "With aortic obstruction in a feeble patient might it not occur that for a moment or two the action of the heart should be so reduced that it could not force the blood... to so distant an outpost of the general circulation as that of the retina". "...there may have been some anatomical condition which would make it, in this case, more difficult for the heart to force the blood into the left eye than the right, and hence the recurring blindness always taking place in the left and never in the right".

¶ Graef's *Archiv für Ophthalmologie*, Band xiv, Heft 1, p. 237.

* Printed in *extenso* in *The Sanitary Record* of April 25th, 1879.

enough, assured me it was no such thing, but some of the best tea. I explained to her that I alluded to the colour of the wall-paper, and she hastily departed. I omitted to state that I took a small glass of hot brandy-and-water before going to bed; and I firmly believe, but for this, I should not have survived that dreadful night.

"On first getting out of bed, I could scarcely stand; indeed, I staggered about like a drunken man, and it required a considerable effort on my part to dress. This I at length accomplished, and opening the door of the room, I stepped out into the passage where there was an open window. The fresh cool air of the morning seemed to give me new life, and in a few seconds all unpleasant sensations vanished as if by magic, and the moment I got into the air I felt perfectly well.

"Upon my arrival at the palace, I found the Queen waiting for me. She remarked that I was late; and I was therefore obliged to excuse myself, by confessing that I had been very ill during the night, and at the same time I intimated that my illness had been caused by the poisonous green wall-paper of my bedroom. Her Majesty was greatly startled by my statement; and after an expression of deep concern and sympathy with me, at once commanded an attendant to have a piece of the paper stripped off the wall and brought to her for the purpose of being examined and tested. This was done, and the paper proved to be as I suspected—highly arsenical. With a promptness and considerateness for the comfort of those about her person so proverbial of Her Majesty, the paper was immediately stripped off, not only from this identical room, but from all other rooms in and about the palace; so that, by her prudent and prompt command, a stop was at once put to any future risk of health or life to anyone who might rest under the roof of the royal palace; and also that it might act as an example to her subjects to suppress decorations calculated to insure a torturing death. Certainly I was not a little touched by the deep concern evinced by Her Majesty to have that which was most pleasing to look upon utterly destroyed. I must confess, however, that that terrible green is not likely soon to be forgotten by anyone who has suffered from its effects, and I therefore think the public should be put on its guard against its use, otherwise I fear many a valuable life will continue to be sacrificed. Let the paper-maker and the undertaker, if they will, enjoy it; but let us not have unsuspecting people poisoned by its continued use."

CASE II. *Cutaneous Affection terminating in Ulceration.*—The Rev. J. R., on his appointment to Helmingham, had the parsonage-house put into thorough repair, and painted and papered throughout with various shades of green. Soon after taking up his residence with his family, the children were observed to be covered with a peculiar dusky skin-eruption. On certain parts of the body and about the arm-joints, the eruptive patches spread and ulcerated. The eyelids were also affected, and the disease proved obstinate. Change of air was recommended, and the children were removed, when a rapid improvement took place, and in two or three weeks they were able to return home. In a few days' time, however, the eruption again showed itself, and the skin became very irritable. Attention was then directed to the green paper on the walls of the nursery. This was examined, and found very arsenical. On its removal, the children's health improved, and the eruptive disease entirely disappeared.

CASE III. *Skin-disease: Intermittent Convulsions.*—The Rev. R. J. S. went to York, and he and his family took up their residence in the house of the former vicar. In a very short time, Mrs. S. noticed that the children were suffering from a skin-disease. A medical man was called in, but the affection proved intractable. On the occasion of one of his visits, he observed to Mrs. S. that an only child of the Rev. Mr. G., the former occupant of the house, had suffered from a similar eruption, and had had a very narrow escape of its life from intermittent convulsions, and that the child immediately recovered after the family left York. Just about this time, letters appeared in some of the public journals on wall-paper poisoning; and the Rev. Mr. S.'s attention was thereby directed to a brilliant green paper on the nursery walls. This was examined, and pronounced arsenical. The children were at once removed, and the next day he sent for a tradesman to strip off the wall-paper. In the course of the day, both he and his assistants were seized with cramps and sickness, and the reverend gentleman had to administer sundry doses of brandy and water to keep them at their work. The room was repapered with a non-arsenical paper, and the children subsequently had no return of the skin-affection.

CASE IV. *Catarrhal and other alarming symptoms of Arsenical Poisoning.*—In March last, Miss S. moved into a furnished house, and in a few days afterwards she was suffering with a cold and cough. Being subject to attacks of bronchitis, she kept her bedroom, and had a large fire lighted in it. Miss S., however, continued to get worse, and symptoms of a more unpleasant character began to show themselves. She was frequently sick, and suffered from continued pain over the stomach.

There was considerable irritation of the throat, with cough and some difficulty of breathing. The general debility increasing, was accompanied by fainting fits, which occurred daily. A friend who called to see her, made a remark on the suspiciously bright green paper on the bedroom wall. She was advised to try the effect of a change to another room. This she accordingly did, by making an exchange with her maid, and every day her health continued to improve. But now another difficulty arose. At the end of a week, her maid was taken ill; a favourite Persian cat, the constant companion of Miss S., was also observed to be covered with a peculiar skin-eruption, and her hair fell off in large quantities. A piece of the wall-paper was examined, and found to contain "arsenic in abundance". The wall-paper was removed, and Miss S. and her maid quickly regained their usual health.

THERAPEUTIC MEMORANDA.

MUSCLE-BEATING AND RUBBING IN INFANTILE PARALYSIS.

DR. ALTHAUS, in the BRITISH MEDICAL JOURNAL (May 31st), directed attention to Klemm's muscle-beater. I cannot altogether agree with him concerning its merits, especially in infantile paralysis. I obtained the beater he describes from the Paris Exhibition; it having been apparently manufactured at St. Petersburg. It certainly requires great skill to employ it properly, and it appears to act much more on the skin than on the muscles; it can never replace methodical and carefully directed rubbing under the medical man's supervision. It is also very difficult to induce a child with infantile paralysis to exert itself continuously for even two or three minutes, much more so for half an hour. I have seen a kind of wooden palette, employed in several orthopaedic institutions on the Continent, which I consider to be more efficient than Klemm's muscle-beater. The palette consists of an oval disc, four inches long by two inches and a half broad and one inch thick, with a handle about seven inches long. The disc is covered with velvet, and strikes the muscle by its flat surface. Usually, two palettes are employed simultaneously, one in each hand of the operator, who taps rapidly with them alternately at the rate of about thirty strokes in five seconds. Naturally, these palettes are more efficacious where large surfaces are to be influenced, as on the front or back of the thigh, buttocks, dorsal muscles, etc. Dr. Dally, who is at the head of an orthopaedic institution at Paris, employs palettes consisting of wooden sticks about ten inches long, to the ends of which are attached stout hollow India-rubber balls about two inches and a half in diameter, which are used in a similar way to the wooden instruments.

By methodical rubbing of paralysed muscles, I mean that every portion of them should be acted upon successively—not only the superficial, but also the deeper layers. Now, this is almost impossible to effect by any mechanical contrivance, although the palettes are more efficient than Klemm's instrument. Many medical men send patients to so-called professional rubbers, without giving any directions as to how the rubbing is to be done. A very good method for rubbing wasted paralysed muscles, which I usually direct to be done by the attendants or relatives of patients, is as follows. A firm circular friction on the same spot is made with the ball of the thumb, from left to right and from right to left, about ten times each way; the smallest possible circle being described, while pressing with the thumb as hard as can be borne by the patient comfortably, helping the thumb if necessary with the other hand. Suppose it is wished to rub the paralysed extensor muscles of the wrist: the forearm lies prone upon the table; the nurse begins to rub as described, close to the elbow to the ulnar side of the limb, and gradually works her way down towards the wrist, keeping to an imaginary longitudinal line; she then begins again near the elbow and works in a similar manner nearer the middle of the forearm, and so on until the whole group of muscles has been manipulated. This is a most simple proceeding, and any one can learn to do it properly in a short time. A little olive-oil is employed to prevent any abrasion of the skin, which would otherwise be apt to occur if it were at all delicate. The rubbing should be continued for about half an hour twice daily.

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FORMULA FOR PODOPHYLLIN.

ALL who have been accustomed to prescribe podophyllin in pills will agree with Mr. E. W. Forster of Darlington (JOURNAL, May 24th, p. 773) as to the impossibility of preventing occasional disastrous effects. But this is the fault of the form of administration, not of the drug. From a very long and extensive experience, I can confidently say that no such accidents or inconveniences ever arise from podophyllin prescribed in the following form; on the contrary, it is one of the most satisfactory