A bag of white rubber — a "fountain syringe" — was presented for examination upon the supposition that it might have been an instrument for the injection of poison. Washings with distilled water gave faint traces of arsenic; scrapings and washings with dilute acid gave more; and destruction of the fabric of the bag gave marked arsenical mirrors. Other bags were tried with similar results. This was reported as valueless evidence, and was never used. Certainly a part, and very likely the whole of the arsenic came from the zinc oxide or other materials incorporated with the rubber by the manufacturer.

THE ADMINISTRATION OF THE POISON.

Aside from the evidence of the administration of a white powder, there are no definite facts as to quantity, time or mode of administration. The doctor left no white powders; the bismuth was suspended in water, the other substances were in tablets or dissolved. So much white arsenic as was found in the alimentary canal was undoubtedly administered as white arsenic, either dry or mixed with food or drink. It is a fair inference that one dose was administered prior to the sickness beginning Friday night, but the duration of the case, the continued opportunity, and the presence of the solid particles in the stomach after death, five days later, are more consistent with at least one other later dose.

A GRAIN OF ARSENIC IS NOT A SMALL THING.

The magnitude of a grain of arsenic is not as appreciable to the world generally as to those who deal with such quantities. With reference either to its effects on the human system, or to the methods of its detection, it is immense. A level teaspoonful of arsenious oxide weighs about 170 grains; if this quantity were divided equally among 600 or 700 human beings only a select and peculiar few would escape violent sickness; if administered in skilfully divided doses, without remedial measures, to 170 adults, many would doubtless die. A common analytical balance in the ordinary course of its use would weigh $\frac{1}{64}$ of one of these grains (.1 mgm.), and a better but not uncommon balance, $\frac{1}{128}$; if the grain were dissolved in 13 gallons of water and a teaspoonful of this liquid were put in a Marsh apparatus the resulting deposit (from .005 mgm., or $\frac{1}{2560}$ grain) is readily perceptible to the practised eye.

From such facts arises, too, the necessity for excessive and unremitting caution as to the chemicals used in such investigations. In the work described, after the rejection of two lots of "arsenic-free" zinc and one of acid, the materials were tested before each one of the fifty-four reductions.

DEATH FROM SANTONIN. — Death as the result of an overdose of santonin is a rare, possibly an unprecedented, occurrence, yet, according to the *Medical Press and Circular*, an inquest was rendered necessary a few days ago at Reading, England, on the body of a woman who had taken about two drachms of santonin for supposed worms, at the instance of an incautious friend. She became delirious and had "fits," which continued until she died. An autopsy revealed the fact that she was not suffering from worms, her abdominal symptoms being caused by an internal neoplasm.

IRIDECTOMY IN EXCLUDED AND OCCLUDED PUPIL DURING ACTIVE INFLAMMATION.¹

BY EDWIN E. JACK, M.D.,

Assistant in Harvard Medical School; Ophthalmic Surgeon to Out-Patients, Boston City Hospital; Assistant Surgeon, Massachusetts Charitable Eye and Ear Infirmary.

As far as I have observed, iridectomy, in cases of iritis with blocked pupil, is done only when the eye has become free from inflammation, the object being usually to make an artificial pupil for visual purposes; sometimes, though more rarely, in order to prevent further attacks of iritis. We all know the difficulty and inefficiency of medical treatment of iritis at this stage. Mydriatics do harm rather than good as their desired action is no longer possible and we wait patiently, relieving the pain, till the attack subsides. During this time sight is likely to be much impaired or lost. Pain and lost vision, are, however, not the only bad features of these cases. The longer the inflammation continues the less likely is subsequent operation for artificial pupil to be successful on account of the secondary changes which go on in and around the iris. These changes briefly stated are — atrophy of the iris tissue, occluded pupil, opacity of the lens, exudation behind the iris and around the lens and ciliary bodies, which later may go on to atrophy of the globe. My own experience in operating for artificial pupil in such cases is not an encouraging one. I have removed pieces of atrophied iris apparently entire but no vision has resulted and investigation has showed the pigment layer still clinging to the lens capsule. At other times the tissue has been so friable that only small shreds could be picked away, leaving a very unsatisfactory opening.

Some time ago a boy with a violent attack of iritis came under my care at the infirmary. The iris was much discolored, swollen and bombé, pain was intense. It occurred to me that there was nothing to lose and very likely much to gain by doing an immediate iridectomy. This was done under ether, the piece of iris coming out entire. Pain ceased very soon after the operation, and though the opening partially filled up again the iritis quickly subsided.

Since that time I have operated on two other cases. One of these was a lady, aged forty, who for many years had had attacks of iritis with severe pain. I was called during one of these attacks by her physician, with the idea of doing enucleation, as she was almost worn out with pain and had finally decided upon this radical step. The condition of the eye was that commonly seen in cases of blocked pupil. Iridectomy was advised and done without ether, the pain of the operation being severe but not much more so than what she had borne for some time. The relief was immediate and there was no return of trouble up to the time of her death, a year and a half later.

The other case was a man, aged fifty-seven, with incipient phthisis and with a history of repeated attacks of iritis for fifteen years. Both eyes showed the evidence of these attacks by numerous posterior synechiae. The patient was having a fresh attack in o. d. with moderate pain; it had been going on for a month, with treatment, before I saw him. During the first two weeks of my observation he was fairly comfortable, but at the end of that time the pupil became excluded and very soon occluded, the iris bombé and

¹ Read at the March meeting of the New England Ophthalmological Society.

pain intense, completely prostrating him. Vision was reduced to the perception of moving objects at two or three feet. Iridectomy was done upward without ether. The iris immediately returned to its normal plane, the pain, though temporarily increased, requiring a subcutaneous injection of morphia, soon stopped. The opening did not fill up, allowing a vision of 0.1 some weeks later, which later still was certainly better, though no accurate test was made. Had I foreseen the good visual result in this case I would have done the iridectomy downward and not upward.

Of course three cases cannot serve as a definite guide for all similar ones; yet I think certain inferences can justly be drawn. The procedure is justifiable if only for the relief of pain, and one may reasonably expect it will do that. It will also, probably in most cases, cause the rapid improvement of the iritis and at the same time prevent those secondary changes which are in some cases destructive and which in others are a barrier to future successful operative measures. It is possible also that the operation may result in an immediate satisfactory artificial pupil.

A CASE OF SUB-HYALOID HEMORRHAGE.

The patient, a lady, aged forty, had never had trouble with her eyes in any way. A week before her visit to me the sight of the right eye became suddenly partially obscured and the next morning there was a practically total loss of central vision. In the macular region was a very large hemorrhage about three and a half to four discs diameter in height and breadth. The upper boundary was straight and horizontal, the lateral and lower boundaries were a curve, the whole like a flattened drop. The color of the patch around the curved border, especially below, was much darker than elsewhere, gradually getting lighter toward the centre and the upper boundary, showing evidently the settling of the blood to the bottom of the affected area. Just outside the border was a narrow rim of lighter red, and below were a few small striated retinal hemorrhages in the course of a vessel. At a point in the large hemorrhage corresponding with the macular was a glistening spot — almost the size of the usual macular reflex. No retinal vessels could be traced within the hemorrhage.

The patient was in good health, there was no renal or organic heart trouble. She had had slight uterine trouble, with occasional treatment, for twelve years, but it had never caused her serious inconvenience. Her only two children had died soon after birth of "heart trouble." Within the last three years she had menstruated but three or four times, the last being a day or two before the onset of the eye trouble. The flow was scanty, and unattended with any local or general disturbance; and, indeed, at no time had she had any symptoms attributable to the menopause. However, on account of this coincidence and the absence of other apparent cause, the menopause seemed the best explanation of the hemorrhage. Three weeks later the V. O. D. = $\frac{1}{2}$ %, the patch was less red, and the upper edge had a frayed appearance. Five weeks after this V. O. D. = 0.3 —, the blood had all disappeared, and the area looked normal, except that above the macula was a retinal disturbance in the form of a faint grayish-white band extending upward, the lower part being made up of fine round white dots. A little over a year later, the patient not being seen again till then, V. O. D. = 1 —, nothing to be seen in fundus except a

very few faint dark-colored dots which were grouped together.

The source of these hemorrhages, arterial or venous, has been disputed, the majority being in favor of a venous origin. The situation, too, though now accepted as sub-hyaloid, has been in the past thought to be choroidal or within the retinal layers. In the case reported the tendency of the blood to fall to the bottom, the complete covering of the vessels and the ultimate return to normal fundus and normal vision would seem to definitely point to a sub-hyaloid situation. In a case reported by J. Herbert Fisher in which a post-mortem was made, the internal limiting membrane as well as the hyaloid membrane had been stripped off.

For the many interesting points connected with this subject, — origin, situation, cause, etc., — I would refer to Fisher's paper in the "Royal London Ophthalmic Hospital Reports," Vol. XIV, Part II, which contain numerous references; also an article by W. P. Holmes Spicer, same reports, Vol. XIII, Part III.

Clinical Department.

INTRAVENOUS INFUSION IN A CASE OF UREMIA.

BY BUTLER METZGER, M.D.,

Ex-House Surgeon, Children's Hospital, Boston.

By the kindness of Dr. E. H. Bradford I am enabled to report the following case:

Wm. M., age six years, entered the Children's Hospital December 7, 1897. About November 1st the boy had an attack of what was thought to be appendicitis. This subsided, but ten days later he was taken ill with lobar pneumonia. After recovery was sent to the Children's Hospital for treatment of probable Pott's Disease with iliac abscess. On entrance there was a mass in the right iliac fossa, not tender; some stiffness of lumbar spine and spasm of lumbar muscles; no kyphosis. After a few days' observation a diagnosis of appendicitis was made, and this was confirmed by operation on December 22d by Dr. H. L. Burrell. The remains of an old appendicitis were found — pus adhesions, etc. Appendix could not be removed, and abscess cavity was drained.

After the operation the patient sank very rapidly, on account of frequent vomiting and inability to retain treatment either by mouth or rectum.

On the fifth day commenced to improve and gained steadily until January 15th. On that date complained of severe abdominal pain, a few hours later of lumbar pain. At 3 p. m. passed a few cubic centimetres of bloody urine. Examination showed much normal blood, a few small round cells and leucocytes, an occasional hyaline and granular cast. Vomited several times in the evening. Given diuretics and hot packs.

On the 16th passed 65 c. c. of urine; on the 17th, 65 c. c.; on the 18th, 150 c. c.; on the 19th, 40 c. c.; on the 20th, 10 c. c.

Examination of the urine practically the same as on 15th. Boy vomited on an average of once every ten minutes, night and day. Various means were tried to stop the vomiting, but without effect. Enemata of peptonized milk and stimulants given every