of the base of the brain as syphilitic meningitis. Nor do I remember ever seeing a well-marked swollen disc pass into a typical form of neuro-retinitis. At present, then, while accepting the valuable and perhaps conclusive evidence of Professor Manz concerning the genesis of the choked disc, I think, on the other hand, that the causation of "descending neuritis" has as yet to be fully demonstrated.

PRACTICAL OBSERVATIONS IN OPHTHALMIC AND AURAL SURGERY.

By ERNEST HART, Esq.,

Late Ophthalmic and Aural Surgeon to St. Mary's Hospital.

III.—THE USES OF ATROPIA.

IN this short series of papers, I have already spoken of several common causes of error and misfortune in the treatment of ophthalmic diseases and injuries, based upon the examination of a decenniad of cases; and have especially referred to consequences of superficial examination of cases which resist manipulation, and of a slowness to appreciate the characters of, and enter upon the appropriate treatment of, glaucoma. I believe it will be useful, further, to group together, for the sake of emphasis, a numerous class of cases in which I have seen mischief arise from slowness to employ atropia locally. Looking through a long list of cases, I find that I have employed atropia-drops in the course of the treatment of 1,523 out of 2,710 consecutive cases of disease and injury of the eye (a list not including, of course, affections of the ophthalmic appendages); and I pass in review a long array of cases in which I had to regret that it had not been used before the patients came into my hands. Two of the most recent consultations which I have entered, were cases of injury to the eye, respectively at Paddockhurst and at Brighton, during the last month. In both cases, the treatment had been unexceptionable, except that atropia had not been used; and, though the globes have been saved, the fixed and closed irides will make the possibilities of vision depend upon iridectomy under not very favourable circumstances. In the very last consultation on a case of iritis, of which I have notes, the treatment had equally been conducted without dilating the pupil. Mercury, leeches, and lotions were in use; a darkened room and an antiphlogistic diet were all in use when I was called; but the vision was extremely misty, the pupil contracted, and the patient in proportionate danger of "false pupil" from the effusion of lymph, and of loss of sight.

Now I do not think that I shall be using an exaggerated form of expression, or going beyond the strict and well-balanced weight of words which is necessary to give due force to the fact to be conveyed, if I say that we could, in the treatment of ophthalmic disease, better afford at this day, so far as our knowledge of disease and means of mastering it extend, to dispense with all other drugs, lotions, and applications put together, than with this one *topical* medicament. Let us consider what atropine does for the inflamed eye. It allays local sensitiveness, and removes local spasm; it gives to the eye and to its internal muscular apparatus—iris and ciliary muscle—physiological rest, the greatest of all curative means. Nor does it do this only, but, in dilating the pupillary aperture, it drives far from us the bugbear which long haunted the ophthalmic surgeon, and which still pursues those who are not sedulously active in the use of atropia—closure of the contracted pupil by an adherent plug of lymph, and gluing of the uveal surface of the iris to the lens. It would rob the consulting-surgeon of a great many profitable but trying operations, if the atropine eye-drops were ready in every surgery, not only on all emergencies, but for the exigencies of daily practice. It is as safe a rule in ophthalmic practice to use an atropine drop when in doubt, as in whist to play a trump. I can hardly think of more than one absolute contraindication, and that is the existing oval dilatation of the iris in glaucoma. There are, of course, also mechanical contraindications, as in peripheral wounds of the cornea with hernia of the iris, where to dilate the iris is to increase the peripheral protrusion; but even here, the moment the corneal gap is healed, atropia becomes of the first necessity. But in all cases of iritis, in contusions and injuries of the eye, in cornetitis, purulent ophthalmia, scrofulous ophthalmia, and deep-seated mixed inflammations of the eye, the local instillation of a solution of atropia is the most precious of therapeutic means. The most useful strength is, I think, expressed in the formula: Neutral sulphate of atropia, two grains; glycerine, five drops; distilled water, an ounce. The frequency of the use of the drop must vary with the facility and rapidity with which it acts. Where the iris has become much inflamed before the local treatment is adopted, it is sometimes very indocile, slow to respond, and hard to dilate. Then the measure of frequency must be the amount of

resistance, and perseverance must be the rule of treatment. In the treatment of keratitis and minor cases of deeper inflammations, one application a day, or at most two, will suffice; and presently, once in two or three days. It will be enough then to keep the pupil dilated, and the ciliary apparatus at rest and free from tormenting spasm. The present result of the most careful observation of the origin and cause of ophthalmic disease, pursued with the advantages of the improved methods of optical diagnosis now at our command, is to simplify our treatment, and to ostracise a majority of superfluous agents of medication. With a little cotton-wool, alum, and glycerine, hot and cold water and atropine, and a pocket-case of instruments, we can treat with a previously unattainable success nearly the whole range of ophthalmic diseases. I am speaking of local and surgical treatment. Ointments, poultices, caustics, irritants, scarifications, venesections, blisters, and setons, may be looked upon almost as things of the past. The medical, dietetic, and hygienic treatment are favourably modified, and simplified to an almost equal extent, by the intelligent study of diathetic indications; but the whole shopful of topical applications may be left aside by the surgeon who will thoughtfully apply the vast resources of the few simple agents I have named; and of them all, atropine is greatest. I will not undertake to say that mercury is useless in the treatment of some forms of (syphilitic) iritis; but I will affirm that I have repeatedly seen iritis occur and run a very severe course in patients previously and at the time already under the influence of mercury; and that, in a long series of cases which I treated by atropia and careful dieting only, and without mercury, during five years at St. Mary's Hospital, the results were so excellent that I could not affirm that they would have been improved by the most guarded and judicious use of mercury. A number of these cases were seen by my colleague Mr. Gascoyen, who took part in the experiment.

It is possible, though not easy, to abuse atropine. It must not be used, as I have said, in glaucoma or in peripheral wounds of the cornea. A case or two of troublesome constitutional symptoms, through absorption of the excess by the lacrymal mucous membrane, have been recorded. This is never likely to occur with ordinary care, and I have never seen it occur; but it may be well to bear it in mind in treating infants. The most convenient and unfailing application may be made by the use of the atropised gelatine discs which I introduced a few years since, and which are now largely used in this country and abroad. They are always ready, do not spoil by time, and are clean and precisely dosed, each disc containing as much as a drop of the solution I have mentioned.

I do not think I have spoken too strongly of the advantages in practice of a free use of the local instillation of atropine. In cases of doubt, it will often throw much light upon an obscure condition; and those not much given to study ophthalmic cases will be presently surprised to find how often it will, in a dubious case, first display, and then rectify after a few days, recent and unsuspected adhesions of the iris. In the average run of ophthalmic cases, whether for the treatment of a large proportion of the inflammatory disorders of the eye, by securing anaesthesia and physiological rest, or in the diagnosis of optical defects, it is of ever-recurring use. Few things would tend to curtail the extent and to increase the success of consulting practice, more than a judicious prodigality by the general practitioner in the local use of atropine.

ON TAPPING IN PLEURISY AND EMPYEMA.

By BERKELEY HILL, M.B., F.R.C.S.,

Surgeon to University College Hospital.

THE discussion between Drs. Fuller, Playfair, and Douglas Powell, on the importance of tapping effusions in the pleura, whether serous or purulent, has been most instructive, and leads one to hope that, ere long, this mode of treatment will become habitual in the early stages, instead of being reserved for a last resource to remove hectic fever and exhaustion, or to ward off approaching suffocation. Having taken great interest in treatment by tapping, and having, through the kindness of my medical colleagues at University College Hospital, had several opportunities of treating extremely severe cases, more especially where air was unavoidably admitted to the pleura, I may perhaps be allowed to make one or two remarks on the subject. The third volume of the Clinical Society's *Transactions* contains a narrative of some cases under my care, and a brief *exposé* of the arguments for and against withdrawal of the effusion by tapping. In this I endeavoured to show that, in serous pleurisy, after pyrexia has subsided, early evacuation, without waiting for the effect of blisters, iodine, etc., is advantageous: 1. Because fresh formation of fluid does not always follow

paracentesis, and cure is then immediate; 2. Because a second effusion is more easily absorbed than the first; 3. Because speedy relief to the pressure on the lung promotes its complete re-expansion, before fibrous adhesions have toughened, and thereby prevents permanent collapse of the lung and contraction of the thorax. In his clinical lecture, Dr. Fuller leans towards this opinion also, though not appearing to adopt paracentesis usually until some delay has taken place. This lecture is directed mainly to prove that the entry of air into the pleural cavity is a matter of small importance. This accident, on the other hand, is maintained by Drs. Playfair and Powell to be so noxious that extreme precautions must be taken to avoid it, though their objections are admirably answered by Dr. Fuller (BRITISH MEDICAL JOURNAL, March 23rd, 1872). Without looking upon the entry of air into the pleural sac as so harmless an occurrence as does Dr. Fuller, I rejoice to find his great experience corroborates my observation, that the risk is not great; and still more am I convinced that, however carefully adjusted the apparatus for draining the chest may be, in the course of a few days the presence of the tube in the wound causes enlargement of its edges sufficient to allow the occasional entry of a bubble of air into the cavity. Dr. Playfair's plan, of keeping the end of his drainage-tube constantly under water, is thus rendered futile. I speak from having tried the plan myself some years ago, by means of a little tin trough, to which the end of the drainage-tube was fastened, and thus secured from accidental exposure; the trough itself being suspended over a bucket, into which the fluid overflowed. But I found not only that after awhile small quantities of air passed into the chest by the side of the drainage-tube, but that if the air did not enter freely enough, the syphon-action of the drainage now and then—for what reason I know not—caused considerable distress to the patient, which was immediately relieved by letting a little air or tepid water flow into the chest. It has occurred to me that this distress was caused either by the pericardium with the heart being thrust or drawn too rapidly towards its normal position before temporary adhesions had time to yield, or by the lung being also dragged upon; but I am not satisfied that this is the right explanation. In one of Dr. Powell's cases (*Clin. Soc. Trans.*, vol. iii, p. 244), the pain caused by this syphon-action is well illustrated, and exemplifies, I venture to think, the soundness of the opinion, that exhaustion may be carried on too fast if more than very gentle suction-power be employed; and I prefer to let the evacuation depend entirely on the resiliency of the walls of the cavity. The amount of mobility of the diaphragm has, I think, been underestimated in accounting for the rapid filling up of pleural cavities. The access of air—a phenomenon constantly present in spontaneous cure of empyema—though sometimes mischievous, is usually devoid of inconvenience, and, I believe, for the following reason: if air have access to a cavity that is continually more or less distended by pus, fermentation of the pus takes place, and septic absorption may follow; or, as this latter phenomenon does not always happen, the character of the pus is yet sufficiently changed to act as a stimulant to further secretion of purulent fluid, and the continual escape of large quantities of matter is kept up. In this respect the pleura behaves just as do other large abscesses—psaos abscess, for example. Since Lister's method of treatment of psaos abscess has been adopted, very large suppurating surfaces cease at once to form matter, and a few drops of serous pus may represent the total discharge for twenty-four hours. So, if the pleural cavity be kept empty by arranging the drainage-tube in a way that the pus can escape as fast as it is secreted, no store collects in the chest, and the lung gradually fills the space previously occupied by pus, being met half way by the collapsing chest-wall. But the simple introduction of a drainage-tube at one orifice will not always insure this continuous evacuation; the tube must be carried across the chest and have an aperture as low as the seventh or eighth interspace. Though commonly successful, complete cure by drainage fails in certain cases of long-standing fluid-effusion; the lung has undergone permanent collapse, and is no longer able to fill out the empty space even when the thorax has fallen in as much as possible. I believe such cases to be very rare, and that they would never be met with were the repugnance to tapping less general among practitioners. Though incurable, these patients may enjoy good health if they are taught to empty the cavity carefully every day. A former patient, transferred to me by Sir William Jenner, in University College Hospital, whose case was published in 1865, has been since then working in a barge up and down the Thames, according to his own account "as well as he ever was", but drawing away every morning about half a wineglassful of thin pus. On the other hand, complete cure sometimes follows very prolonged use of the drainage-tube. There has just left my care a girl aged 10, who wore for nearly two years a drainage-tube passed from a spontaneous opening in the third interspace in front through the thorax to the sixth, opposite to which point the pus had a second time perforated the pleura and formed a large abscess beneath the superficial parts. The child

has been enjoying good health during the greater part of the time, notwithstanding she has had a bad attack of scarlet fever in the interval. At the present time, the fistula has been soundly healed for six months, and a respiratory murmur is heard over the affected side, as low as the sixth rib. It may be urged that this was a very long time to submit a patient to the risk attending a fistulous communication with the pleura; but this, after all, was a period of good health and comfort to her, and she was rescued by it from an extreme condition of hectic, depending on the imperfect drainage that had been set up spontaneously.

I venture to think that the case of Andrew, the subject of Dr. Fuller's clinical remarks, and still more, the cases of Dr. Douglas Powell, were less successful than they would have been if continuous efficient drainage had been carried out, and that they establish its advantage over repeated tapping or imperfect drainage by a simple fistula after tapping without insuring that the evacuation of the pus shall speedily follow its secretion.

PARACENTESIS IN EMPYEMA.

By GEORGE COWELL, F.R.C.S.,

Senior Assistant-Surgeon to the Westminster Hospital; etc.

THE remarks of Dr. Fuller with regard to this subject, remind me of a case which occurred in my practice eight and a half years ago, and which so completely corroborates Dr. Fuller's view, that I make no apology for asking a place for it in the pages of the BRITISH MEDICAL JOURNAL.

The case was one of empyema of the left side, occurring in a boy nearly eight years old. The circumference of the left side was slightly more than an inch larger than that of the other, and the heart was displaced to the right side. Paracentesis was performed by making a small incision through the skin, and the introduction of an ordinary trocar. As it was my intention to introduce a piece of perforated drainage-tube, no precautions were taken to prevent the introduction of air into the cavity of the chest. As soon as the flow of pus began to diminish, the cannula was withdrawn, and a No. 4 silver catheter was introduced through the wound with the object of making a counter-puncture in the wall of the chest, by cutting upon its end made prominent in an intercostal space. Whilst I was attempting this manoeuvre, pus continued to flow slowly through the catheter, and I confess that little or no air could, up to this point, have gained admission to the chest. Before I had accomplished my counter-puncture, a matter much more difficult than I had anticipated, the patient became faint, and it was deemed wise to desist. The catheter was withdrawn, and the wound closed with a piece of lint and a bandage.

On the next day, the wound, which had closed, was reopened with a probe, and a few ounces of pus again flowed. After a few days, the wound remained open, and, being covered only by a piece of wet lint, the pus was allowed to flow freely from it. The lint was changed daily. The boy had no shivering, and in a few months recovered. There was considerable deformity at first from the falling in of the side of the chest.

About eight months ago, my friend Mr. Pain, who had assisted me at the operation, sent this boy to me, and I examined his chest. Besides the cicatrix of the paracentesis wound, there was nothing to show which side of the chest had been affected. Respiration was perfect, and the boy was strong and well.

This case and others since have convinced me, not only that the admission of air does no harm, but that a single opening is sufficient for the continued draining of the pus cavity, and that a drainage-tube of any kind is superfluous and unnecessary. The introduction of a drainage-tube, according to the plan of M. Chassaignac, has been sometimes adopted with the view of diminishing the supposed risk of absorption after the admission of air, but the risk at the subsequent removal of the tube is far greater. I remember a case where a tube was worn for eighteen months; but in which, after convalescence was apparently established, death ensued within a week of its removal.

GUARANA (PAULLINIA) POWDER A REMEDY FOR SICK-HEADACHE.

By P. W. LATHAM, M.D., F.R.C.P., Physician to Addenbrooke's Hospital, Cambridge.

THE abovementioned remedy, to which Dr. Wilks called attention in last week's JOURNAL, has for some time been a favourite one in France for sick-headache, as well as for various forms of neuralgia, given in doses of ten to fifteen grains or more of the powder once or oftener in the day.