

watched over the before-mentioned children, and on the 28th she also was taken ill. The first symptoms were,—Shivering, and intense prostration, so powerless that she could not stand; tingling of the throat, back of the nares, and in the ears; the throat became dry, and deglutition became difficult. On examining the throat, there was the plague-stricken spot on the left tonsil. Ordered four ounces of port wine and strong beef-tea, with the nitro-muriatic acid and cascarilla mixture.

Oct. 29th.—The spot is much increased, extended over the uvula. Powers enfeebled; pulse 120, very feeble; tongue white and furred; skin cool and moist; bowels regular; urine scanty, but natural. She can scarcely breathe through her nose. The discharge is increased from the mouth and nose, and the breath is become fetid. Ordered the chloride-of-zinc gargle, and thirty drops of tincture of the sesquichloride of iron in infusion of calumba root. Strong hydrochloric acid was applied with a glass rod to the ulcerated surface. Several large pieces sloughed away.

30th.—Pulse very feeble, and bodily power failing. The whole of the soft palate and back of the throat is covered with the sloughing mass. The ears and Eustachian tubes are very tender and painful. Deglutition is performed with great effort and pain. The nares are extremely painful, and the discharge acrid and disagreeable. Applied again the muriatic acid. Ordered half a pint of port wine a day, with eggs and beef-tea, and to continue the medicine.

31st.—Still getting weaker. Pulse 130, irritable; skin cold and clammy; the wine passes down her throat like liquid fire, giving great pain. Ordered wine and beef-tea *ad libitum*; the iron to be increased in quantity, three drachms of the tincture to be taken every day.

Nov. 1st.—Better; throat less swollen, and dysphagia less; bowels well moved; dyspnoea less. At every gargle, pieces of dead material come away. Steaming her nose and throat over hot water has relieved her much. Skin beautifully warm and moist.

2nd and 3rd.—The throat is granulating quickly; several large pieces have been thrown off; foetor less, and appetite improving; pulse 120, fuller and more regular.

From this time she began gradually to improve; each day pieces of morbid material were brought away. The throat healed up in the course of a week or two perfectly, and day by day her powers improved, and she left my care on November 15th, quite recovered.

*Remarks.*—The disease appears to me to be confined to the mucous membrane, neither touching the muscular nor glandular structure. The glandular enlargement is due to sympathetic irritation, the same as we see often in other parts of the body; thus a wound in the leg producing an enlarged gland in the groin. The question has been asked—"Is it scarlet fever without the rash?" This, I think, is answered—1st, by *absence of all fever*; 2ndly, *absence of all rash*; 3rdly, *papillae of the tongue not enlarged*; and 4thly, *no desquamation of the cuticle after the disease passes off*. Yet, on the other hand, scarlet fever existed in the adjoining house. It differs also materially from cynanche tonsillaris. In that disease the abscess forms within the tonsil, and bursts its way out. But in diphtherite, the morbid change commences on the surface of the mucous membrane, and is confined solely to that covering. The extreme and rapid depression is only equalled by the depression of malignant scarlet fever, or the collapse of Asiatic cholera. Each patient that died appeared to sink from exhaustion and partial asphyxia.

*Treatment.*—The main point to keep in view is to support the patient's powers, and check as far as possible the inroad of the disease. The former by stimulants and tonics; the latter by the application of the strong mineral acids. The question may arise, might not tracheotomy have been successfully employed to relieve the dyspnoea. My reply is, that the depression of the patient's powers was far greater than the dyspnoea, so that the operation would have been unsafe. The depression did not result from the blood being imperfectly aerated is shown by the depression appearing before the dyspnoea. The dilatation of the pupil did not depend upon the belladonna given, for it existed as a marked symptom in every case. As regards remedies, I believe the tincture of sesquichloride of iron the best. The essentials of the disease, or the symptoms in the order they occur, are these:—*Shivering; intense depression; dryness and tingling of the throat, nares, and ears; external swelling of the glands; a whitish spot on the mucous membrane of the tonsil, gradually deepening in colour as the disease progresses; dysphagia and dyspnoea; dilated pupil; impending asphyxia, and death.*

Carlton House, Enfield, November, 1857.

ON THE

## TREATMENT OF INFANTILE HYDROCEPHALUS BY ELASTIC PRESSURE.

By RICHARD PHILLIPS, Esq., M.R.C.S. & L.S.A.

THE effects of simple support and pressure in inducing absorption of fluid when in contact with living tissue, are too generally known and recognised to require any additional arguments in their favour, and it is only because of the objections and difficulties attending the methods hitherto used, that I can ascribe the circumstance of so many cases of the hydrocephalus of infants being given up as incurable at the present time.

Five and thirty years ago it was known that it was possible to get rid of encephaloid effusion by mechanical pressure; but I am not aware that such a treatment is now advocated at any of our medical schools, from which I can only conclude, either that the success was on further experiment found to be doubtful, or that there existed some insurmountable obstacle in the adaptation of the means.

The simple narrative of two interesting examples which have occurred in my own practice, will, I trust, serve to revive a mode of treatment that would seem to have too readily fallen into desuetude, and to point out a far more convenient and efficient method of carrying out the principle than any hitherto published. It may indeed be asked why the details of so apparently successful a treatment of so painful a malady have been withheld so long, seeing that one of the cases occurred as long as ten years ago. My reply is, that an isolated case, however gratifying in its termination, and however well authenticated in its particulars, is not exactly what one would desire from choice, to present to public criticism, so I resolved to wait patiently for another opportunity of testing fairly this novel way of combating the disease in question, before venturing to publish it beyond the circle of personal friends.

Within the last six months it has been my good fortune to conduct even a less promising case of infantile hydrocephalus to a successful issue, and I therefore feel no longer justified in keeping to myself what I so much desire should be a boon to others, and what can hardly, I think, fail to be a subject of interest to every one engaged in the treatment of disease.

In the hydrocephalus of infants, when once the soft union of the cranial bones yields to the expanding influence of the fluid within the brain, I believe the progressive increase of the effusion is mainly attributable to an atonic, passive condition of the meningeal vessels, resulting from the absence of that resisting medium offered by the healthy, normal calvarium. Truly this is but a *post hoc* hypothesis; still, inasmuch as it explains very satisfactorily the principles on which my treatment is based—viz., pressure, or *active resistance*, there seems to me no good reason why it should not be advanced. Ordinarily, in this disease, effusion goes on gradually increasing till a limit is reached of the distensibility of the dura mater, or till death from internal structural lesion ensues. In the former instance, the absorbents, flaccid or paralyzed, or in some way rendered useless, are unable to dispose of the percolated fluid, when the whole mass of brain, serum, and distended membranes, becomes consequently encased by an extension of ossific deposits, and the poor patient lives on an object of lasting pity, most probably utterly helpless, having a head vastly disproportioned in size and weight to the power of the muscles appointed to direct its various movements, and which cannot therefore maintain (or if so, with the greatest difficulty) its centre of gravity on the spinal column, its natural support and fulcrum of leverage.

CASE I.—Mrs. T——'s infant, whose head had been subjected to severe pressure at birth, owing to the early rupture of the membranes whilst the os uteri was in a rigid, undilated state, rendered necessary by flooding from a partial placental presentation. This child, two days after birth, appeared to be in great pain, which was attributed by the nurse to the bowels not being cleaned of the meconium. A little ordinary medicine was given for this purpose, but without any relief to the child's sufferings; for, at short intervals, its screams continued day and night. My attention was now attracted by a heat and redness of the scalp, and an apparent enlargement of the head. The latter in a few days became more obvious; the vessels of the scalp more engorged; the eyes fixed downwards, and having a tremulous motion, and the stomach so irritable, that but little food could possibly have been retained in it. Day after day the enlargement continued to increase rapidly, the sutures gradually yielding to the hydrostatic pressure from within, so

that by the end of a fortnight, I could place my ring finger between the division of the frontal bone, along the longitudinal and also the lateral sinuses; even the nasal bones had a space between them. At this time the operation of tapping was proposed, but the poor child's powers seemed so entirely exhausted, that the father, (a retired surgeon,) after much deliberation, preferred that his child should take its chance of living or dying in a natural way, to subjecting it to an operation. In this view my own judgment entirely coincided. Three days later the appearance of the little sufferer was most revolting, the scalp distended to its utmost limits, shining, and livid from venous congestion; the eyes were directed downwards and inwards below the axis of vision, and constantly oscillating; the limbs perfectly emaciated and shrunken, and the countenance wearing the expression of a seven months' hydrocephalic fœtus. There was still left a slight power of suction, but the stomach remained equally irritable, and the child kept constantly screaming. The tension of scalp was at this time so great, that it was difficult to divest oneself of the apprehension lest the whole mass should suddenly burst, and thus terminate a scene too distressing to contemplate.

Partly with the view of inducing absorption of the fluid, but chiefly with the hope of preventing the threatened catastrophe, I constructed an elastic loop, or fillet, with strong india-rubber webbing, two inches wide, with which to encircle the head. Having made the fillet purposely too small in the girth, I was enabled, by stretching it with both hands from within, so to adjust it as to exercise a considerable amount of well-regulated pressure round the distended cranium. A cold spirit lotion was also applied frequently to the heated scalp, and the head directed to be supported by a pillow.

On the third day after adjusting up the elastic fillet, the nurse informed me that the band had become loose, and which I thought might probably arise from the effect of heat on the caoutchouc; but on a close examination, it was obvious that the cranial bones had approximated each other, and that there was less tension of the scalp. I now had the fillet taken in to the extent of an inch and a half, stretched it, and put it on again.

In three more days the band was observed to be quite slack, and I had the gratification of finding the different bones had almost been brought into contact; that the scalp was slightly wrinkled; the eyes again visible, and less tremulous, and the general aspect of the child greatly improved. The fillet was again taken up, re-adjusted, and allowed to remain on another fortnight; by which time the bones had positively overlapped each other considerably, forming prominent ridges in the situation of the different sutures. The eyes would now follow a lighted candle in any direction, and had but little of the vibratory, oscillating motion which had been so conspicuous throughout; the stomach retained all the food, and the child showing no signs of pain or distress, gradually gained flesh, and became more vigorous.

Union having apparently taken place between the cranial bones, except, of course, at the fontanelles, which were not, however, larger than usual, I conceived all that simple pressure and mechanical support could effect, had been obtained, so the fillet was removed, and directions given to sponge the scalp frequently with an evaporating lotion.

Eight months after birth the condition of the child was as follows:—The head certainly somewhat larger than that of a child of a similar age, but moves easily at will in all directions; the ridges produced by the over-riding of the bones are fairly levelled off, and the sutures feel smooth and even; the anterior fontanelle is depressed below the level of the adjacent parts, and but little hair has grown on the scalp. The child exhibits in a diminished degree the ordinary marks of mental development, but there is left a slight strabismus, and quivering motion of one eye; the limbs are tolerably well developed, and the flesh feels firm and healthy. After a short course of iodide of iron the eye became steady, but the squint remained. It seemed probable indeed that all the fluid was not absorbed, but that the portion still left may possibly be necessary to afford the required support to the brain till the unnatural sized cranial case became filled by the gradual growth of the organ. I therefore determined to let well alone, taking care to give every facility for increasing the child's constitutional vigour in every possible way.

All has gone on well with the case; the boy is now ten years of age, has gone through the catalogue of the diseases of childhood, in addition to a series of clonic convulsions for twenty-four hours, after swallowing some india-rubber, but which ceased as soon as the substance passed in a semi-dissolved state. He is chiefly distinguished from his brother by being a little

more headstrong [and impetuous, and having a slight cast in one eye.

CASE 2.—J. W.—, a twin child, of the age of three months, had a febrile attack, with great heat of scalp, marked scantiness of urine, irritability of stomach, constant screaming fits, and slight convulsions, with the head thrown backwards upon the pillow. The head, according to the mother's account, soon began to enlarge; and, at the age of six months, when I first saw the case, measured twenty inches in circumference, the parietal bones were separated from each other, and from the frontal and occipital bones, to the extent of a quarter of an inch, the anterior fontanelle was raised and fluctuating, the eyes were depressed below the margin of the lower lids and tremulous, and the whole trunk and extremities in a state of great emaciation; the abdomen swollen and tympanitic.

The elastic fillet was adjusted as in the former case, the bowels cleansed by mild mercurials and castor oil, and a course of iodide of iron prescribed. The size of the child's head, in ten days, began to diminish, and the edges of the bones to approximate each other; the eyes became by degrees more visible and less tremulous; the heat of scalp greatly lessened; and the irritable state of the stomach perfectly tranquil. At the end of three months there was a firm bony union at the different cranial sutures, the head had assumed a conical form, but the fontanelle was quite flat; the eyes had regained their proper position as to elevation, but there was slight strabismus and oscillation of the globes when the head was moved. The child had now also considerable power of moving its head into the upright position, and that for the first time; the limbs had become plump and fairly vigorous. It would notice objects as much as other children of its age; and, instead of being cross-tempered, irritable, and restless, had become remarkably amiable, and a tranquil sleeper.

It may be well here to mention, that owing to the more advanced age of the child, there was some difficulty in preventing it from slipping off the fillet with its fingers, and that it became necessary in consequence to secure it by cross-bands over the vertex, and a chin-stay below.

One or two inferences have occurred to me in the treatment of the foregoing cases which it may be as well, perhaps, to mention as bearing on the particular time when success may most reasonably be hoped for.

1st. It would appear that when hydrocephalus is progressing in young infants, the process of ossification in the cranial bones goes on with supernatural rapidity, as if Nature were eager to protect the all-important centre of life as quickly as possible, unduly exposed as it is, under present circumstances, to external injury; the consequence of which is, that after the edges of the bones have been brought together, and union taken place, the circumference of the head still remains considerably larger than would have been the case had there been no disease. *The earliest possible age, therefore, and where the case is not of long standing, are, I conceive, the conditions most favourable to the treatment by pressure.*

2nd. That, although when we have succeeded in approximating the bones, and maintaining them in that position long enough to effect their intimate union, there is reason to believe there may yet remain more or less unabsorbed fluid in the ventricles, as evidenced by the tremulous state of the eyes and an abnormally large cranium, this is not nevertheless to be regarded as an unsatisfactory result, inasmuch as it was perfectly evident to me, when observing the progress of Case No. 1, that in proportion as the encephalon became developed synchronous with the body's growth, so the remaining fluid in the ventricles was gradually absorbed and disposed of, in consequence of the increased pressure within the cranium; the bones being now fixed just as the larger portion of fluid had been influenced by the sustained pressure *ab externo*.

In Case No. 2, the head is now much larger in proportion than was the case with the first child at the same period of its history, which I attribute to the circumstance of the cranial bones having had time to radiate by ossification to a more extended circumference before the treatment was commenced; but the *concave* state of the fontanelle, the firm union of all the bones, the cool state and natural colour of the scalp, the lessening of the strabismus, the rapid development of the mental faculties, as well as the progressive growth of the limbs and frame generally,—all lead me to conclude that it is following precisely the same course as did Case No. 1, and that in due time the cure will be in every respect as complete and satisfactory in one as the other. I deemed it right in this case to give a course of iodide of iron, because the child was so pale and anæmic (scalp excepted) when first brought to me. It had for some weeks been under treatment in very competent hands,

and was considered to be in a hopeless state when placed under my charge. This I mention to shew that even in what seem the most unpromising cases there is good reason to anticipate the happiest results from the peculiar form of treatment here so imperfectly advocated and explained. Not, indeed, that I am presumptuous enough to suppose that all cases of infantile hydrocephalus are to be cured in future on the principles I have endeavoured to enunciate; but with perfect truth it may be said, that a more exaggerated example of the disease than Case No. 1 could scarcely be conceived, neither would it be easy to select a more unpromising case, from length of standing and constitutional atony, for probationary experience than Case No. 2.

Sir Gilbert Blane (the authority before referred to) and others have treated, with partial success, cases of hydrocephalus by mechanical pressure, the means employed being bandages and adhesive strapping; but this is very different, both in principle and extent of power, from the sustained, well-regulated support and pressure obtained by the elastic fillet I employ. In the former there is all the inconvenience arising from the growth of hair on the scalp to be considered, and also the great probability that all the good we could reasonably hope for must be limited to a very short period after the strapping is applied; for, as there is no elasticity in the material used, all pressure ceases as soon as diminution of bulk begins; whereas, in the latter mode, the pressure is kept up in a greater or lesser degree till the caoutchouc filaments have shrunk to their natural limits. The taking up and readjusting, too, of the elastic fillet, is an affair of but a few minutes, or even less still, if we are prepared with a proper succession of sizes; but the removal of a number of adhesive straps from the hairy scalp of a screaming child, and the careful readjustment of the same every twenty-four hours, is a process requiring almost the attributes of a Job, and a not over-sensitive state of the operator's *portio mollis*.

Pentonville-road, Claremont-square, Oct., 1857.

## REMINISCENCES ON THE TREATMENT OF DISEASE WITHOUT THE USE OF ALCOHOL.

WITH PRACTICAL OBSERVATIONS.

By JOHN HIGGINBOTTOM, Esq., F.R.S., F.R.C.S.

ON DELIRIUM TREMENS AND INSANITY.

FOR the first twenty years of my practice I treated delirium tremens on the stimulo-narcotic plan, with brandy and opium, and followed the directions laid down by the most approved authorities on that subject.

During the last twenty years I have laboured to prevent, as well as to cure, delirium tremens. The prevention is now by no means uncommon in men, arising from their entire abstinence from intoxicating agents, such as alcohol, opium, and tobacco. This has been successfully the case with many men, who have quite reformed their former habits; but I am sorry to say that I have never known a female really reformed. In women, ebriosity and its sequences appear quite incurable, so far as my strict observation of twenty years has extended. Females do not appear to possess mental and physical powers to abstain from intoxicating agents, when the habit is once formed.

In the year 1834 I attended a patient with delirium tremens, with the late Dr. Andrew Blake, of Nottingham. He published the case in his well-known work, "A Practical Essay on Delirium Tremens" (second edition). The patient "was a fat and robust publican, who lived in an atmosphere charged with alcohol, as some would say; in addition to which he daily indulged very freely in ale and spirits, and had done so for years past." I wished him to remove altogether from his public-house; he took my advice, and reformed his drinking habits—a very rare case at that time, now twenty-three years ago. He is still living, sixty-nine years of age; and to use his own words, when I called upon him a few days since, and said to him "Why, you are still alive!" he answered "I'm but a lad, yet!" His wife died of delirium tremens about a year after her husband's attack of the disease.

I have not only discontinued the use of alcoholic stimulants in the treatment of delirium tremens, but also of opium, having

been much dissatisfied with its effects; and have been led to consider it only as a palliative, which hides and often aggravates the disease.

I have not known in twenty years a single individual injured by abstaining *at once* from all intoxicating agents.

In the treatment of delirium tremens it is necessary first for the patient to abstain from all intoxicating agents.

In the beginning of a fit of intemperance, an emetic dose of ipecacuanha is invaluable, as mentioned in my paper in THE LANCET for April, 1855, "On Ipecacuanha as a Remedy for Drunkenness," particularly as it has the effect of removing the desire for intoxicating drinks. I prefer ipecacuanha to the tartrate of antimony, as it produces no debilitating effects, and can be taken with perfect safety. It acts as a stimulant to the whole system; equalizing the circulation, promoting the secretions, and assisting each organ of the body to perform its functions. This remedy, with the assistance of needful aperients, proper diuretics and diaphoretics, given in a state of effervescence, tend to carry the *effete* matter from the system. It is necessary to continue these remedies for ten or fourteen days. My brother-in-law, the late Dr. Marshall Hall, who has been justly named "the English Physiologist," said to me, "If a man gets drunk he cannot altogether get rid of the *nervous poison*, alcohol, from his body in less time than a fortnight!"

The digestive organs being restored to their normal state, weak tea or coffee, or any other simple diluent, may be taken as a beverage; for food, a light nutritious diet; *much exercise in the open air*; with a daily shower-bath, or sponging the whole body with water, will effect a cure.

It is not unusual for patients with delirium tremens to become insane, and to be inmates of a lunatic asylum. Even in some of these institutions such patients are not debarred from alcohol in the form of malt liquor. It has never occurred to me in more than forty years' practice, that alcoholic beverages were at all proper or necessary to be given under any circumstances to insane persons; so that I never prescribed them either as a medicine or as a beverage. It is truly said that "one of the most precious gifts that Providence can bestow is a sound and vigorous mind in a healthy body." Alcohol is particularly destructive to the brain and nervous system, and, consequently, to the mental and physical powers of the whole body. Drunkenness and insanity appear so near akin, that drunkenness has been called "voluntary insanity," and we often find that such voluntary insanity terminates in involuntary and incurable insanity. This was the case with the first insane person I ever attended; he was a talented professional man, who became insane from the use of rum and tobacco, and continued in that pitiable state for twenty years, till he died.

I have yet to learn why alcohol in any form is given at all to insane persons, as I cannot imagine what benefit can be derived from it. The disuse of alcoholic stimulants altogether in our lunatic asylums, both as a beverage and as a medicine, would be attended with the most beneficial and happy results to all the inmates.

The sum expended for malt and hops has been a very serious item in the expenses of some lunatic asylums. I have in my possession an annual report of a provincial lunatic asylum, in which the cost of malt and hops alone was £328 6d., without adding the expense of wine and spirits used in the institution. The sum expended for bread in the same report was £258 17s. 10d., being £69 2s. 8d. less sum for bread than from malt and hops.

The experiment of having a dairy instead of a brewery attached to a lunatic asylum would be attended with the most beneficial results. Substitute "white blood," as Dr. Erasmus Darwin called "milk," for alcohol, which is a narcotico-aerial poison.

In the treatment of insanity, entire abstinence from alcohol in every form appears to me quite indispensable, and to substitute as a beverage pure water, whey, butter-milk, barley water, and weak tea; for diet, milk, and light nutritious animal and vegetable food. These, with the sanitary measures of the present day, which have been carried out in lunatic asylums as well as in other institutions, such as much exercise in the open air, and when not practicable, in well-ventilated rooms; baths, or sponging the body daily, &c., have produced most beneficial results.

The following amusements, I believe, nearly all have been adopted with benefit: such as music, singing, drawing, pictorial representations, short lectures on interesting subjects, reading proper and useful books, gardening, agricultural pursuits, natural history, innocent games, &c.

Nottingham, Nov. 1857.