the teeth were evidently irritating them ; though the crowing is sometimes as violent as at first, and occasional strabismus, this little patient is well and thriving, under the occasional use of the gum-lancet, and attention to the same diet it commenced from its weaning. Is not this a beautiful instance of the crowing disease, resulting from irritation of the stomach, and cured by removing its cause ; and, subsequently, from irritation in the gums, and cured by the lancet. Can it be mistaken? Mr. North mentions an interesting case of this affection, arising from constipated bowels, which was relieved by brisk purgatives, and never returned.

That there may be other causes of this complaint I do not mean to deny. Dr. Marsh, of Dublin, relates a case of a child recovering from it, having a relapse from living in a newly painted house, cured by removing, and subject to it again on returning ; and two other children, being primarily attacked by the same cause.

After all, what do these cases prove? Simply, that this crowing inspiration is only a symptom of irritation ; that it is an example in practice of what *was* ridiculed in theory, but is now forcing itself irresistibly upon the profession, of the correctness of Dr. Hall's views of the reflex function of the nervous system. An impression is made on some distant nerve, transmitted to the medulla oblongata, and reflected again to some other organ, it may be the eye, the larynx, the hands or feet, the bladder, &c., giving rise to the symptoms previously enumerated.

What then should be our treatment? Let us remove the sources of disturbance, restore the balance of the system, nourish and nurse rather than depress the strength ; we then shall have fewer cases of convulsion, and not have to look for the centric origin of a disease which is clearly of another character.

RESULTS OF TAPPING THE HEAD IN

NINETEEN CASES OF HYDRO- CEPHALUS.

By J. T. CONQUEST, M.D., F.L.S., &c.

SIR:—Nearly *ten* years having elapsed since I was first induced to attempt the cure of chronic hydrocephalus, by withdrawing the fluid from the ventricles, the time seems to have arrived when the profession has a claim on me for some account of the results of these operations ; and, indeed, this has become necessary in consequence of the numerous applications for information on the subject by practitioners, not only in Britain, but in many distant parts of the world. Still it is a matter involving

such important considerations, that until experience has thrown much more light upon it, I do not feel justified in advancing anything beyond the mere statement of facts, such as the present position of my inquiries warrant, leaving to a future day a more methodical and full investigation of the origin, nature, and progress of this formidable disease, with its appropriate medical and surgical treatment.

The operation consists in passing a small and delicately constructed trocar into one of the lateral ventricles, and drawing off so much of the fluid as the powers of the constitution will admit of. The most eligible spot at which the trocar can be introduced, is in the course of the coronal suture, about midway between the crista-galli process of the ethmoid bone, and the anterior fontanelle, so that the danger of wounding the corpus striatum is avoided, on the one hand, and the longitudinal sinus, on the other. The instrument usually penetrates about two inches, and in most cases the serum has been colourless, but occasionally tinged with blood. In one instance (and that was in the last child operated on at *St. Bartholomew's*, only a few weeks since), a large and alarming quantity of fluid blood escaped, most likely from a branch of the meningeal artery. Sometimes, on withdrawing the trocar, the water will not flow until a probe has been passed along the caula to remove portions of cerebrum which block it up. After taking away all the fluid that can be removed consistently with safety, the head, which should always be steadily compressed by an assistant during the operation, may be strapped with adhesive plaster, that it may retain its diminished size, and that the fearful consequences of suddenly removing long-continued pressure from the brain may be averted.

I have now tapped in *nineteen* cases, and of these *ten* were living when last heard of. Several of the children, before the operation, were reduced to the most deplorable condition, having frequent convulsions, with loss of sight, emaciation, &c., but the diminution or disappearance of these symptoms has been very remarkable. In some cases the results have been triumphantly successful ; in others, from the reluctance of the parents to have the operation repeated, only temporary relief has been afforded ; but none of the children died either during or immediately after the operation ; and those which in the subsequent list are reported as dead, survived weeks or months after the fluid was withdrawn.

All the operations were performed in the presence of many medical men, and most of them before large bodies of students at *St. Bartholomew's Hospital*, and their progress has been watched by gentlemen who have felt a deep interest in their termination, and although exclusive dependance has been

placed on the withdrawal of the fluid, without the auxiliary assistance of any pharmaceutical or other remedial means, yet I consider much of the success is attributable to the kind and able superintendence of medical friends.

Having long entertained a conviction that this deplorable disease ought not to be left without something being done for its relief and cure, and not discouraged by the want of success that had followed similar attempts, and considering "*anceps remedium melius quam nullum*;" it was in the autumn of 1828 that I performed the *first* operation, on Catherine Seager, aged twenty months, whose head had been gradually enlarging during the previous half-year. Not more than two ounces of serum flowed, but on a probe being passed into the ventricle (by Mr. Harvey, of Islington), at the close of the day, a considerable quantity of fluid escaped stillicidium, so that during the night it was calculated that the saturated bandages and napkins could not contain less than two pints. Only one paroxysm of convulsions followed the operation, and some symptoms of meningeal irritation which supervened were speedily subdued by leeches and cold evaporating lotions. Two years and a half subsequently I had the high gratification, in company with some friends, to see this child, when the parents left England for America; and it was not only in perfect health of body, without the slightest evidence of its having been the subject of so formidable a disease, but in full possession of its intellectual powers.

The *second* case was that of William Honey, aged eight months. The enlargement of the head had been perceptible about six weeks, and on the 20th of November, 1829, I tapped him at *St. Bartholomew's Hospital*, and withdrew twelve ounces of colourless serum from the right ventricle. On the 2nd of December twelve ounces more were withdrawn, and on the 16th an additional ten ounces and a half, making the total quantity thirty-four ounces and a half. This child was progressing most satisfactorily, when it became the subject of hooping-cough, to which intractable disease it fell a victim some months after the last operation.

The *third* operation was performed on William Wilmer, a boy now (March 1838) under a course of education in the Orphan Working School, City-road, nearly *eight years* having elapsed since twenty-four ounces of water were taken away by twice tapping him. The history of this interesting case appeared in *THE LANCET* of September 15, 1832, by Dr. Caldwell, whose patient he was. That the account may be authenticated and impartial, the following statement is an extract from that communication:—"William Wilmer, aged four months, came under my care in the month

of July, 1830. His head was] of an enormous size, and had been so from his birth; the forehead was large and prominent, the eyes heavy and somewhat convulsed, frequent hiccup, vomiting, &c. Several gentlemen had seen the case, and they all gave it up as hopeless. In the beginning of August Dr. Conquest performed the operation upon this child, and immediately the fluid issued forth in a stream, at first clear, and afterwards a little tinged with blood. During the remainder of the day the child continued rather weakly, but was more lively than he had ever previously been, and for some time afterwards the intensity of all the former symptoms greatly diminished. When a month, however, had nearly elapsed, it was considered requisite to repeat the operation, and on the 3rd of September Dr. Conquest again extracted a clear liquid to the amount of twelve ounces more. The child sleeps well, eats heartily, is very lively, and is in the full enjoyment of all its mental faculties.

Signed, "H. S. CALDWELL, M.D.
"Sept. 6th, 1832."

Amongst other things mentioned in the paper from which this extract is taken, is the curious fact that the head, which was enormously large at the time of the operation, remained stationary, although the size and strength of the body had gradually increased in proportion to the age of the boy, and now that nearly *eight years* have elapsed, the head, although still disproportionately large, remains at about the same dimensions.

The *fourth* case, that of Elizabeth Forster, is referred to with more than ordinary satisfaction, not only because it is the one from which the largest quantity of water was extracted (no less than *fifty-five* ounces), but more particularly because I had lost sight of the child for years, and thought it was dead, until, in September last, I received the following most gratifying communication which I transcribe entire, as it will convey all necessary information of the case:—

"Dear Sir:—Being lately on a visit in Buckinghamshire, I was enabled, through the kindness of Mr. Cowley, of Winslow, to see the child, Elizabeth Forster, residing at Little Harwood, on whom you performed the operation for hydrocephalus about *five* years since. Her countenance and general appearance are healthy; her appetite good, and her rest at night undisturbed. She has been attending a school in the village, where her progress has been equal to that of the other children; she answered questions which I addressed to her on this and other subjects with a shrewdness for which her governess says she is remarkable. The greatest circumference of the head measures 22 inches; the ossification is complete with the exception of the posterior fontanelle, and two other openings of the same size two inches apart on either side of the medial

line, in the course of the coronal suture. Her mother showed a lively sense of gratitude for the benefit which she had experienced under the treatment to which you had subjected her. Yours, &c.

“FRANCIS COOK, M.D.”

It would be useless at present to detail the particulars of the other fifteen cases, as all that is important will be found in the summary given at the end of this communication, and from which it appears that of the 19 children operated upon, 10 were living when last heard of, and 9 are dead; but it is only fair to say that as most of these children were amongst the lower classes of society, who are continually changing their residences, several have been lost sight of, and may now, very probably, be dead, although when last seen, some time subsequently to their having been operated upon, they were living.

Of course these operations have been attended with different degrees of success. Unquestionably some are cases of perfect recovery; but, in every instance, there has been a very marked diminution of suffering, and prolongation of life, and in no one case has a fatal termination been accelerated.

Dr. B. G. Babington has analysed the

fluid with great care, and states its specific gravity to be 1004. It does not coagulate by heat, acids, and alcohol, and consequently does not contain albumen. Tincture of galls produces no immediate precipitate, but after standing some hours a few brown flocculi subside, proving that it contains a very little gelatine. On evaporation 1000 grains yield 10 grains of solid matter, chiefly chloride of soda, proved by precipitation with nitrate of silver. The liquid therefore contains in 100 parts—

Water	99.
Gelatine	0.1
Chloride of soda	0.845
Other salts and loss ..	055
	<hr/>
	100.000

In no instance has clearly marked congenital disease been permanently benefitted, and those cases have done best in which effusion manifestly resulted from inflammatory action, and in which cerebral excitement followed the operation.

The number of cases tapped, with the quantity withdrawn, will be seen in the tabular summary which concludes this brief notice of the subject.

No.	NAMES.	Number of times Operated on.	Quantity with- drawn.	Living.	Dead.
			Ounces.		
1	Catherine Seagar	1	32	1	—
2	William Honey	3	34½	—	1
3	William Wilmer.....	2	24	1	—
4	John Hall	5	48½	—	1
5	Alfred Parman	4	45	—	1
6	Mary Rayon	3	26	1	—
7	Charles Discomb	2	20	—	1
8	John Ward.....	1	8	—	1
9	John Clauditt.....	2	22	—	1
10	Charles Clarke	2	17	—	1
11	Elizabeth Forster	5	55	1	—
12	Jemima Evans	1	7½	—	1
13	Jane Brocken.....	1	13	1	—
14	Eleanor Maloney	1	9	1	—
15	Frances Chiddy.....	4	33	—	1
16	Thomas Norman	1	6	1	—
17	Anne Arminio	3	31½	1	—
18	James Thompson	2	14	1	—
19	John Pratt	1	9	1	—
19		44	455	10	9

I feel no ordinary pleasure in thus simply recording the progress of my investigation of this momentous and interesting subject, and shall be most happy to receive from my professional brethren any suggestions that

may assist me in attempting to diminish this one source of human suffering and death.

Finsbury square, London,
March 1st, 1838.