

the sweetness of Condrieux with the sparkling of the impetuous Ai ; it is then only that the wine-drinker can enjoy, in diamond glasses, the exquisiteness of veritable Tokay."

Our lovers of good cheer can have less of the light wines, for few of them bear the passage from Dover to Calais, and hence our repast of luxury usually takes a different turn. The glass of Madeira, or of Sherry, after soup, a glass or two of some of the Rhenish wines, one or two of Champagne, a glass of Port after cheese, one of Madeira after dinner, three or four of Port during the dessert, a cup of coffee and a glass of liqueur, are the orthodox habits of the luxuriant. We do not possess a standard author on "the art of drinking wine." Still some rules are found to be necessary for the maintaining a pretty general state of health. There are those who heedlessly mix ale and porter with their wine, and, on many occasions, inflict upon themselves much future mischief, for the body becomes quickly bloated, and an inordinate quantity of fat is always deposited in the cellular substance of those who drink these products of fermentation at the same period.

The Burgundy wines are the first in the world ; the genuine Chambertin is one of the most wholesome, but the common wines are too often substituted for it ; few, however, but those who have been long habituated to them can discover the difference in them, and very seldom do they find their way into foreign countries. They are duly prized on the spot, and the generous Richebourg, the delicious Romanée, and the high flavoured St. George, are known only to those who visit the land of their growth. It is to the soil in which the grape grows rather than to the labour of the man, that these exquisite wines owe their excellence : they produce no bad effect, though it is said a long continuance in their use is apt to cause some degree of constipation, and some of these wines are known to give a black colour to the biliary fluid.

Of all the wines of France, none deservedly hold so a high rank as those of Champagne, and none where the constitution is sound, are more healthy ; yet, strange to say, one hundred and twenty-eight years of discussion were necessary for the physicians of France before they came to a decision that they were not the cause of gout. In 1652, the School of Medicine of Paris began a most violent controversy, and in the year 1788, the decision of the faculty was publicly given, that Champagne was the finest wine of France. The public, however, had not waited for the verdict, but had given its testimony in favour of the delicious wine, by enjoying all its rich qualities, and it has ratified the judgment of the learned doctors by drinking the wine with great avidity.

Many judges declare the Champagne best

that does not effervesce ; still no quality of wine is so healthy as that which sparkles, and the taking the contents of the glass whilst the action is going on is of some importance, in many states of the system. The carbonic acid gas that is evolved is quickly imbibed by the stomach, and assists very much in reducing the blood when it is highly arterialised, and hence incapable of giving to the liver that quantity of carbon which the venous blood should contain. It is a wine peculiarly adapted for females, on this account : there are particular moments at which venous blood should circulate in their veins more highly carbonised than usual.

The slight excitement of the cerebral system that is produced by Champagne is very transient, nor is it without a useful effect occasionally ; but of all the dreadful states that intoxication can produce, none are so terrific as those that occur from drinking of this wine to excess. The state of congestion of the blood in the brain is such, as to give reason to fear that sudden death may occur, for extravasation is the result. Various phantasies, connected with the organs of sight, arise in the minds of those who have taken inordinate quantities of this wine ; this may be derived from the partial effusion or pressure of blood on the choroid coat. The sense of hearing, too, becomes confused ; and also the touch is affected, and where delirium tremens has occurred in Champagne drinkers, it has almost always been accompanied by a belief that strange sights are seen ; that conspirators are heard plotting, or that animals are crawling over the body. Champagne has the effect of causing uric acid to be deposited ; and whether this, under the shape of red gravel, is to be considered an effort of nature to expel a formidable enemy, or whether it be itself a disease, is a subject which may admit of much discussion, into which I cannot now enter.

CASE OF
LARYNGEAL ASTHMA*
OR
SPASM OF THE GLOTTIS,
WITH OBSERVATIONS.
By THOMAS HENRY BURGESS, M.D.

JULIA M., an infant between six and seven months of age, of an active constitution, and nervous temperament, and born of parents

* If the word *asthma*, from the Greek "*ασθμαζω*," signifies a difficulty of breathing ; and if that difficulty of breathing is produced by a spasmodic stricture of the bronchial vessels spreading from thence to the muscles of respiration, as we are informed by Floyer, Hoffman, and Cullen, we presume that we are perfectly justified

similarly constituted, was attacked with that disease peculiar to infants, and variously designated by authors, — Millar's asthma, crowing inspiration, spasmodic croup, &c. &c., in January last, to such a degree, as to threaten immediate suffocation.

The infant, from its birth up to the accession of this disease, enjoyed perfect health; but it was observed from its earliest infancy to catch, or rather hold its breath, when crying, which was attributed by the nurse to passion. However, this symptom was not paid any attention to, and appeared in the nurse's eyes of no importance whatsoever, for when the child's health was inquired after, the nurse usually observed, that she was remarkably well in every respect, but she was very passionate. It is to be observed, that the mother's milk did not flow for several days after the birth of this child, that the infant was fed with the spoon during this period, but from then until she was three months old, the mother continued to suckle her, being at this time compelled to give up nursing, in consequence of ill health, and from that period to the present, the child has been brought up by spoon-feeding alone. I may here state, that, a few days after birth, the *thrush* appeared, and passed away in the space of forty-eight hours, without having occasioned the slightest uneasiness to the little patient during its progress, although there was a considerable quantity of flaky mucus passed off by stool, still the disease was remarkably mild, and did not appear to influence her health in the slightest. The infant was vaccinated twice during the period she was nursed by the mother, and without the slightest apparent effect, not even producing a blush in the vicinity of the punctures; she was about six weeks old when vaccination was first attempted (the small-pox being prevalent at the time), and ten the second time. The child was frequently observed, after taking food, and without the slightest exertion, to throw up from the stomach a water brash-like fluid; this sometimes disappeared for weeks, and then returned as before. Nothing worthy of observation presented itself in the state of the child's health, from the time of its being weaned until it was five months old; the change of food produced no effect whatsoever at the time, at least, no apparent effect; she was naturally costive, even from birth (her parents being of the same habit), and this derangement was

neither increased or diminished by the change of nutriment consequent on her being weaned. But it may be here noticed, that, between the first and second vaccination, an immoderate flow of saliva commenced, saturating several cloths daily, and continued until the infant was nearly five months old; it then became suddenly suppressed, and without any apparent cause whatever. The child's health during this period was, as before stated, remarkably good. It is worthy of remark, that from the time when the flow of saliva first commenced, until it totally disappeared, the holding or catching of the breath *never showed itself*, and led the nurse to suppose that her baby had got over her "*passion fits*," as she was wont to observe. All seemed going on well with the child, who being naturally quick, was increasing daily in liveliness and vigour. On Christmas day, the over-fond mother thought, as her baby was looking so remarkably well, and seemed in the best spirits possible, that she would give her a "morsel of plumb-pudding," which she avers was not as large as a nut, but it appears was saturated with sherry wine. However, the child seemed nothing the worse of this for a few days, according to the nurse's account. On Friday, the 5th of January, remarkable for the dense fog which immediately preceded the severe frost, the child was observed to be particularly uneasy and restless, and this being supposed to have originated from derangement or irritation of the bowels, *hydrargyrum cum creta*, gr. iij., were ordered to be given at bed-time, to be followed in the morning by a teaspoonful of *castor oil*. This appeared to have the desired effect in giving the child relief, and in quieting her restlessness, and for the next week appeared in very good health. Just at this period the profuse flow of saliva ceased, and the frost set in with great severity. On the 10th of January, the child was observed again, and for the first time since it was weaned, to "hold its breath," as if from passion; this appeared twice during that day, and still without occasioning any alarm to the parent or nurse; it will be recollected that this day (Wednesday, the 10th of January) was the first of the severe frost. On the 11th there was a tendency to catch the breath observed, but it did not actually occur; the child's bowels were opened by medicine twice or three times during that day. On Friday, the 12th, the inclination was still stronger than on the previous day to hold the breath, and a stifled passion-fit did occur during the evening of this day. On the 13th nothing remarkable presented itself, excepting the child's head being unusually hot. This being again attributed to intestinal irritation, rhubarb and magnesia was administered to the child at bed-time, with apparent benefit.

in calling this disease *laryngeal asthma*, which is merely distinguished from the former, by the seat of the *spasmodic constriction* being removed from the bronchial vessels to the *larynx and its muscles*. Besides it removes all possibility of confounding the disease with croup.

On the 14th, the head was still above the natural temperature, but nothing else was observed; this day the weather was extremely cold, snowing all day. On the following morning the child awoke with a crowing fit, for the first time restraining her breath for near half a minute, and alarming the nurse, for now she observed the infant's face become congested, and a blue rim appeared around the margin of both lips during the fit. However, the child returned to her natural state in a few moments after, and, seeming nothing the worse of what had happened, it was again overlooked, as being of little moment. In the afternoon of this day, another fit came on as the child was sitting in its mother's lap, which the latter attributed to passion, in consequence of her sitting down in place of walking about, this being the child's favourite amusement; this was also overlooked, and the mother only observed, that the child should be broke of this evil habit in time. A third fit came on as the child was being undressed this same evening, but disappeared almost instantaneously on her being raised to the erect position. There were no symptoms of teething present, the child was not irritable in the slightest manner, and, excepting this peculiarity, seemed in the best possible health. On the 16th, a day of severe frost, so much so that the water was frozen in the basin of the child's apartment, although a fire was kept constantly burning there, no fit appeared on waking in the morning, and during the whole of this day only one mild attack came on; but the child's head was observed to be extremely warm, in consequence of which the mother was led to take off the cap for awhile, that the heat might subside, thinking that the extreme cold of the atmosphere would soon reduce its temperature. But this was not of the slightest avail, although persisted in for two hours, and the mother then gave the child a powder as before, containing rhubarb and magnesia, which produced two motions, and considerably abated the inordinate heat of the scalp. On the morning of the 17th, the child had a mild paroxysm as it was being dressed, this was about nine o'clock; there was an interval of two hours between the first and second fit, the latter being more severe than the former; another fit, still more severe than the two previous, appeared after the lapse of one hour, and the nurse, supposing it to be the effects of passion, attempted to subdue it. The disease again returned in or about half an hour after the last attack, and was repeated every half hour until two o'clock; at this time it assumed a much more serious aspect, and the fits recurred in quick succession (the intervals between each being about ten minutes), continuing in this state for the space of an hour at least. The family medical attendant saw the infant

in one of those fits on this day, and for the first time. He had not seen the child for two months before, and on looking at the head, thought it very much enlarged; it was also considerably above the natural temperature on this day, which led him to think those "fits" were owing to effusion at the base of the brain, and were probably the precursors of convulsions, which he said was to be obviated by the timely application of leeches behind the ear, by the use of the warm bath, and by aperients, such as hyd. c. creta, in two grain doses, all of which was adopted on that evening. It is worthy of observation, that a few moments before the leech was applied, the child had a severe attack of the disease while sitting quietly in the nurse's lap; that on the application of the leech the child screamed violently from the pain of its bite; and during this time not the slightest symptom of the disease appeared. This exemption from the disease was remarkable throughout this case, whenever the child was irritated so as to scream violently; and on this and other peculiarities we purpose commenting, after detailing the facts of the case. From the difficulty of stopping the bleeding of the leech-bites, the infant lost more blood than was intended; still the heat of the scalp continued unmitigated; but about two or three hours after the administering of the hyd. c. creta (the nurse by mistake having given two powders instead of one), a copious evacuation was produced, which succeeded in diminishing the abnormal heat of the head, that had now continued for thirty hours. After the hæmorrhage ceased, the infant fell off into a tranquil sleep,—the sleep of exhaustion, and which continued undisturbed for six hours; when the child awoke from this slumber it was unusually restless, but the disease did not appear on her waking; the head gradually resumed its former morbid state of heat, and a throbbing of the fontanelles was particularly evident. The medical attendant ordered the head to be uncovered during the day and the body kept cool.

I saw the child in a mild fit on this day; but thought the disease was totally unconnected with any cerebral affection. I stated my opinion, that it was a nervo-laryngeal affection, probably spasm of the glottis; that the exciting cause was derangement of the alimentary canal, arising from costiveness. I lanced the gums immediately, in case dental irritation was a cause of the disease, passing the instrument as deep as the maxilla, but there was not the least appearance of teeth, the child being now near six months old. During the two following days, there was no recurrence of the disease, but about two o'clock on the third day there was a severe fit of crowing.

There was no apparent cause for this attack, and it came on whilst the little patient

was sitting quietly with its nurse. I saw the child during this fit, and was convinced that it was a well-marked example of the disease commonly called the "*crowing inspiration of children*," &c, and of a purely nervous character. Any individual who had once seen this affection could never mistake it again for any of those diseases incidental to the infantile age. On the 22nd I had a consultation with Dr. Marshall Hall respecting this disease, when it was agreed that if possible the child should be provided with a young and healthy nurse; and if this could not be acquired asses milk might be substituted; that the gums were to be freely lanced at least once a week, and the bowels kept regular by mild aperients. Dr. Marshall Hall did not at this time see the child in a fit of the disease, but from the description given was convinced of the existence of the affection under consideration; the warm bath was also recommended every other night, and strict attention to the antiphlogistic plan as regards nourishment. By this treatment the disease was warded off until the evening of Monday, the 29th, when the child had a very severe attack, bordering on convulsions; she was immediately put into a warm bath, which perfectly relieved her for the time being; and after taking a powder containing rhubarb and magnesia, fell asleep in the nurse's arms.

The child now, for the first time, began to evince symptoms of terror at each accession of the disease; formerly she never appeared in the least degree alarmed before or after the fits. No medical man saw the infant this evening; and as she appeared quite well next morning, the mother thought it unnecessary to have medical advice. During the next four days the disease appeared only three times, but the fits were of much longer duration than any of the preceding. On the 5th of February, the disease being aggravated, Dr. Marshall Hall and myself again saw our patient. During our visit the child had two severe fits of the disease; these were the first which Dr. Marshall Hall saw this infant have, and was now convinced that there was no cerebral affection existing as a cause of this disease. He also agreed with me in attributing it solely to a derangement of the alimentary canal, the motions being black and slimy, without a tinge of bile, and these produced with difficulty, even by the aid of medicine. The bowels were ordered to be briskly purged, and Dr. Marshall Hall recommended hydrocyanic acid as an antispasmodic, in the proportion of a minim to the ounce, a teaspoonful to be given occasionally after the bowels were acted on. I saw the child early next morning, and was informed by the nurse that the medicine had operated twice, but the motions were still dark and scanty; that she had admini-

stered the hydrocyanic acid once only since the bowels were opened, and only one crow came on during the night.

The child was sleeping when I made my visit; the breathing was evidently laborious, and sometimes stertorous during the time I was present. The child awoke after the lapse of ten minutes, crying, but had not an attack of the disease. I could now perceive a peculiar *rudesse de la voix*, or raucity of voice, especially in the act of crying, and which was not at all observed before this day. After walking about the room for a few minutes, the nurse proceeded to administer the hydrocyanic acid a second time, and with great difficulty could get the child to take it. From the irritation produced by forcing the little patient to take the acid mixture, a paroxysm of the disease was brought on, which began like one of the mild attacks that were heretofore observed, but rose gradually to a fearful height. The first evidence the child gave of the approaching spasm was by bending the *body forwards*, as in *emprostotonos*,* and not backwards, as Dr. Clarke observed in the cases he relates. She seemed gasping for breath, and darted her head on all sides, as if seeking for air. There was now a momentary pause, in which the respiration was totally suspended; and this was immediately followed by a sound deep in the larynx, resembling the "*death rattle*," or the rushing of waters, which led me to suppose that some of the liquid had passed into the air passages.

The face now assumed a purple cast; the eyes were uplifted, presenting that peculiar appearance denominated "*pathetic*;" the pupils were widely dilated, and a deep blue, or livid areola appeared around the margin of the lips and eyelids; the body was still bent downwards, and rigidly retained in that position. The thumb was clenched in the hand; the arms and legs were strongly contracted; in a word, the entire body was in a state of the most rigid spasm. The gurgling sound of the air passages terminated in two or three *impeded* attempts at inspiration, which were at length followed by a long, loud, and shrill crowing inspiration, resembling that of *pertussis*; and the little sufferer, instead of crying, as formerly, now, from the extreme exhaustion, fell over in the nurse's arms, into a deep slumber; at first the breathing was heavy, but it soon became perfectly tranquil, and in this way she reposed for near one hour.

* Dr. Marshall Hall had never seen this state of contraction before; and this is the case he alludes to in his last lecture, where he states "the fifth case I saw there was *emprostotonos* and contraction of the pupils during the spasm, with dilatation afterwards."

The following four days the paroxysms were milder, but more frequent than heretofore; and on Saturday, the 10th, they became greatly aggravated, and the danger of asphyxia was extreme; towards the evening of that day a violent paroxysm came on, far surpassing any of the former; the child lay perfectly stiff in my arms for some moments, and in this state, *with her clothes still on*, I plunged her up to her middle into a warm bath, which was ordered to be kept in readiness in case of any emergency. Dr. Tweedie came in just as the child was being removed from the bath, and was present during two paroxysms of the disease. I omitted saying that the fit previous to the warm bath being used terminated in convulsions, the first and last time during the progress of the disease, that they appeared.

Dr. Tweedie thought the disease was now at its height, and the infant's life was in considerable danger; that *during the paroxysm* nothing could be done to alleviate the sufferings, or avert the danger of strangulation, and they must only be allowed to take their course; and owing to the great torpidity of the bowels the most active remedies must be had recourse to. During the last four-and-twenty hours there was only one scanty motion, dark-coloured, and of the consistence of *putty*, although the child had taken three powders within that space, containing one grain and a half of calomel, with five of the dried carbonate of soda. The mercurial purgatives will be found, in general, improved in their action by the addition of this alkali, and followed up by a teaspoonful of castor oil. It was now agreed upon that one grain of calomel, three of scammony, and three of rhubarb, in the form of a powder, was to be administered immediately, and in two or three hours after a teaspoonful of the common black mixture, should be given; if this did not operate the powders were to be repeated until the bowels were moved. Injections of warm water having failed repeatedly on former occasions were not resorted to on this. The powders and black draught were administered twice, and after the lapse of eight hours and a half *one dark-coloured* motion was produced. The medicine not operating, as was expected, though six powders of the above strength were administered within the twenty-four hours, I changed the three grains of rhubarb for three of jalap next day, after a single dose of which the bowels were copiously discharged.

At the mother's anxious request I sat up all night with my little patient, as she dreaded the convulsions again coming on. However, nothing serious occurred in the night, but towards morning the child had *two modified* attacks of laryngeal asthma, the disease having evidently yielded to the

influence of the medicine that had been administered. The powders were repeated every four or six hours from the last dangerous attack, until the disease was greatly abated. There was no accession of the paroxysms from Saturday evening until Monday evening, the 12th of February. Dr. Tweedie saw the child this day, and considered her greatly improved. He was surprised that her spirits, which were still active and lively in the extreme, were not in the slightest affected by the brisk and continued purgation, and the exhaustion produced by the disease itself when the paroxysms were so frequent and severe. On the morning of Tuesday, the 13th, the little patient not having had any medicine for nine hours previous, evinced a tendency towards the crowing inspiration again, the same peculiar *rudesse de la voix* as before mentioned, became again apparent. The calomel and drastic purgatives were immediately administered, and after the lapse of two hours, during which the crowing tendency continued, a copious evacuation (but still unhealthy) was produced; four hours after the last was given another was repeated, which also operated briskly, and the motions were not quite so dark as before, but still not natural; each of these powders was followed in due time by a spoonful of the common black draught to accelerate their action.

Dr. Marshall Hall now strongly urged change of air for the child, as he had two little patients within the last season, which were quite recovered by it, after the use of medicine. However, the inclement state of the weather at the time would not permit of an immediate change, and the child was now swathed in flannel, and the heat of the room was regulated by the thermometer to be between fifty-eight and sixty degrees of Fahrenheit. I find nothing particular noted down in my case-book during the three following days (those are the 14th, 15th, and 16th) respecting the disease, but that the bowels were still kept freely open by the same remedies. On the 17th I was wished to substitute a mild aperient,—*hyd. c. cret.* for the very severe remedies which had not been used for a week; accordingly the former medicine was administered in three grain doses, three times during the ensuing four-and-twenty hours, but without an effect, and the evidence of approaching spasm being again apparent, I immediately had recourse to the drastic purgatives, which operated after three hours, and banished the threatening symptoms of the disease.

On the 18th the child appeared uneasy and restless, but no appearance of the disease presented itself, and I again lance the gums, being the third time since the disease assumed its dangerous aspect. The only medicine that was administered th

day was a teaspoonful of castor oil, which operated mildly on the bowels.

On the 19th and 20th the child was doing well, and lively in the extreme.

I saw my little patient on the 21st, at noon, and the disease appeared almost gone. The nurse informed me she had only one paroxysm within the last twenty-four hours, and that the bowels were opened twice during the same time without the aid of any medicine. I now strongly urged the mother to remove, for even a few weeks, to one of the villages around London, and this she accordingly did on the following day, February 22. Although the first week after the removal to the country the weather was very severe, still the child appeared benefited considerably by the change, as not a single crowing inspiration was observed during that time, notwithstanding her being confined to her nursery from the day she was removed until the 1st of March. The bowels were still torpid, and an occasional mild aperient was necessary to keep them open; but from this time until the present nothing of any importance occurred (excepting one *threatened* paroxysm) in the infant's hygiene, the disease appearing to have altogether subsided, and the little patient is now daily progressing in health and vigour.

The following facts, detached from the history of the preceding case, are those which particularly demand our attention.

First,—That the infant, from its birth, evinced a tendency to spasm of the larynx.

Second,—That during the continuance of the profuse flow of saliva, this tendency to spasm totally disappeared, from which it would appear that dentition was the cause of it, more especially as the symptoms reappeared on the suppression of the discharge.

Third,—That the spasmodic paroxysms assumed a quotidian form, recurring at two o'clock each afternoon, *for some days*, and disappearing during the intermission.

Fourth,—That there was no cerebral affection whatsoever as a cause of this disease.

Fifth,—That the irritation produced by crying, or screaming violently, *seldom or never brought on a paroxysm* of the disease, this being contrary to all other recorded accounts of the same affection.

Sixth,—The *emprosthotonic* contraction of the body, in contradistinction to the cases narrated by Dr. Clarke and others.

Seventh,—The *contracted* state of the pupils during the paroxysm, and dilatation afterwards, which state I believe has not been hitherto recorded, except in last week's LANCET, where Dr. Hall alludes to *this* case in his lecture.

Eighth, and last,—The obstinate torpidity of the bowels, which in this instance appears

to be, without doubt, the real exciting cause of the disease.

Observations, Physiological and Pathological on the preceding Case.

It has been disputed by authors whether the nature of this disease be inflammatory or nervous. It has likewise been contended whether the affection under consideration is a distinct disease, or merely a modification of another. Those who have advocated its inflammatory nature maintain that it is only a modification of croup: and those who are inclined to believe that it is entirely a nervous affection, equally maintain that it has no relation whatsoever to croup, or any other affection of an inflammatory tendency, but maintain that it is a disease in itself perfectly distinct and independent from all others, with, perhaps, the single exception of infantile convulsions.

In the entire animal economy we have not a more beautiful specimen of mechanism than that which the larynx presents; the exquisiteness of its adjustment, the skill of its contrivance, and the completeness with which the intended result is secured, can never fail to strike the young physiologist both with wonder and admiration. The production of sound and voice, the varieties of which correspond in intensity and duration with the vibration of the vocal chords produced by the air passing over them, must also excite the deepest interest in him to investigate and unravel that wonderful mechanism. Impressed with these ideas we were lead from our earliest studentship to the anatomy of these organs, and have more recently received an additional stimulus in these pursuits from the physiological views advanced by Dr. Marshall Hall; and this very disease under consideration (in our mind) may serve as one of the best illustrations of his "Theory of the Reflex Function." That an organ of such vital importance as the larynx should be so highly endowed with sensibility as it is, does not need an explanation; it only remains for us to allude to the source from whence that sensibility is derived, and the guarding and controlling power it has over this organ, that by the inferences arising from this investigation we may be enabled in a manner to point out the physiology of this important and interesting disease. Independent of the four laryngeal nerves derived from the par vagum, we find that the openings of the larynx are also supplied with branches from the sympathetic and spinal. The descending branches of the first cervical ganglion of the sympathetic join the laryngeal nerves, so also do the cardiac branches of the sympathetic,—the cardiac ganglion itself being formed by these nerves, by the eighth pair and their recurrenents. We find the superior laryngeal nerves to be principally distributed to the membrane and glands of the larynx;

this is what has been called the constrictor of the larynx, and the inferior laryngeals to the muscles of this organ; the muscles supplied by the latter being three, viz., the posterior and lateral crico-arytenoid, and the thyro-arytenoid. Now, two of these muscles thus highly endowed with nervous influence through the medium of the par vagum, cervico-spinal, and sympathetic nerves, are *contractors* of the larynx; the third being a dilator. The superior laryngeal, as before stated, is chiefly distributed to the glands and lining membrane of the larynx, but it sends off two branches to the arytenoid and crico-thyroid muscles,—the former a contractor, the latter a dilator of the rima glottidis. From the foregoing brief sketch of the anatomy of the larynx, three things appear to us as worthy of observation:—1st. The peculiarity of distribution of the laryngeal nerves. 2nd. The high degree of *latent irritability* (if we may use the expression) that must exist around the sphincters of the air-tube owing to their nervous connection. 3rd. The *contractors* of the larynx being more numerous and more highly endowed with involuntary nervous energy than the dilators. This last arrangement is one of those wise provisions of Nature, showing her desire of avoiding complication in the mechanism of our being, of avoiding all unnecessary expenditure of muscular exertion in the performance of our functions, and of rigidly observing the laws of economy whenever such an object is attainable. For instance, the larynx in its natural or quiescent state is expanded or rather dilated, such a state only being compatible with existence. Then, the reason is very evident why such a state should not require muscular exertion to maintain it so continually; for we know that the dilatation of the glottis, even after the act of deglutition, depends more on the elastic and erectile properties of the tissues adjoining this orifice, than upon mere muscular exertion. But the contraction of the larynx depends altogether on another source for its due performance. Here it is that the muscular exertion is brought into proper play; and here it is most required. If we swallow a portion of food the larynx is hermetically sealed while the extraneous body is passing over it; and this is done by *muscular exertion* alone; but the moment the alimentary bolus has passed into the œsophagus, the exciting cause being removed, the larynx immediately resumes its natural position; it resumes this position, not by muscular exertion, but by its own elasticity, the antagonising power of the constrictors of the larynx having given way. We know that this muscular arrangement is indispensably necessary, as without it life could not go on; it is absolutely necessary that there should be some guarding and controlling power over the orifices of this organ, that

they may be closed against the slightest particle of offending matter presenting itself in their vicinity; and how beautifully and effectively Nature has provided against such intrusions we have clearly demonstrated through a knowledge of the anatomy and physiology of this region.

If the larynx and its muscles are so highly endowed with sensibility in adult life, how much more so must they be in the infantile state, when the nervous system alone has the ascendancy, where it rules supreme over the entire system, morbidly alive to every impression, and governing the functions of the entire economy by its influence. We all know the wonderful changes which the larynx undergoes from the period of infancy to that of puberty; the alteration in its calibre, and in the chordæ vocales, producing thereby those variations of sound and voice, from the shrill cry of infancy to the deep full tone of manhood. We are also aware that the young system, in progressing towards puberty, gradually loses that inordinate sensibility and irritability it possessed in infancy, and with it the larynx becomes less excitable, and more (as it were) under the control of volition than it was heretofore; hence it is that we never find laryngeal asthma attacking adults. However there is a case or two of this having taken place upon record, but they appear of doubtful origin.

From the recorded history of this disease, from its near alliance to infantile convulsions, and (without presuming) from our own experience, we are led to the following conclusions:—1st. That laryngeal asthma, or spasm of the glottis, is a disease peculiar to infancy, by which we mean any period within twelve months from the infant's birth; and in this conclusion we are in a manner borne out by the fact that this disease is seldom or never seen in the Hôpital des Enfants Malades, at Paris, where there are no children *admitted under one year*. We are informed by Dr. P. Hennis Green that during the four years of his attendance on this hospital there was not a single case of this disease admitted. Mr. Walker, of Drury-lane, did not see this affection while attending this hospital; and during our attendance on the Children's Hospital at Paris, we never met with a case of the disease. 2nd. That those children who *have not been nursed* by the mother are much more liable to this disease than others. 3rd. It likewise appears that infants of a nervous temperament are more frequently subjected to attacks of laryngeal asthma than those of a lymphatic or sanguineous constitution; in short it is a *purely nervous disease*; and nothing appears to be more erroneous than confounding it with croup—an inflammatory disease; it has no relation whatsoever with it, and all those names given to this disease with a view of connecting it with croup are radically bad,

as they invariably tend to give a false idea of its real nature. Guersent, of Paris, has described this affection under the name of "pseudo-croup nerveux," and more recently Jurine and Albers have described it as a mere modification of croup. But we agree with Dr. Joy, of Dublin, who maintains that it is "broadly distinguished from croup, as well by its intermittent nature, as by the usual absence of cough and fever, and by the sudden death which not unfrequently occurs in it." Gardien gives a description of this disease under the title of "*Spasme du Thorax et de la Glotte*;" but his cases are more like hysterical affections than that under consideration. He attributes it to a spasm of the diaphragm, muscles of the chest, larynx, &c., and differs widely from all other writers on the subject, in supposing that it most frequently occurs between two years old and seven. He also states that the stomach and intestines are distended with air, producing great uneasiness; but I am not aware of this being observed by other writers, and in those cases that have come under our notice it certainly was not present. We have observed, however, a peculiar symptom in the case just related, viz., the contraction of the pupils during the paroxysm, and their dilatation after it was over.

Dr. Marshall Hall has lately directed the attention of the profession in this country to laryngeal asthma, as being one of the best illustrations of his "excito-motory system." This disease, as Dr. Hall justly observes, is produced either by difficult dentition, over-feeding, or constipation of the bowels, through an excitation of the fifth pair, the pneumogastric, or the spinal nerves. In addition to those already enumerated by Dr. Hall, I would beg to add *cold* as an exciting cause, particularly where there is a predisposition to the disease, as is well exemplified in the foregoing case. For, in the instance alluded to, the disease was always observed to be aggravated when the temperature of the body was below par, and seemed in a great measure removed by swathing the infant in flannel, and thus producing an increase of warmth. The *predisposing cause*, in the present instance, seems to be the excitability of the infant's nervous system, which was, perhaps, aggravated by the early changing of the child from its natural food, and in all such instances convulsive diseases are more or less to be dreaded. The *exciting cause* was undoubtedly the obstinate constipation of the bowels, producing derangement in the functions of the alimentary canal, the irritation arising from which was reflected upon the larynx through the par vagum, and thus producing the spasmodic constriction of that organ. And the *immediate cause* appears to be the *extreme cold* applied to the body when thinly clad. Teething seemed to have no part in

exciting the disease in the present instance, if we except the suppression of the profuse salival discharge; and even this exception seems to be nullified by the fact that up to this very day the discharge is still suppressed, and still there has not been even a tendency to the disease for at least five weeks. There was evidently no irritability in the gums, or in the child's disposition, nor any of those symptoms consequent upon teething, to warrant us in supposing that irritation from that cause was an excitor of the spasmodic paroxysm.

Morbid anatomy has done little in clearing up the exact seat and nature of this disease, if we except a negative proof given in favour of its being a *nervous affection*, and which we are led to infer from the fact that there never has been found any evidence of inflammation in the supposed tract of the disease, during those posthumous examinations we have on record.

With regard to the *treatment* of laryngeal asthma, we are more inclined to advocate the purgative than the palliative plan, not presuming to recommend this treatment from the case above related alone, but from several others which have come under our observation, in which we are confident no other plan could be so efficacious. Before trifling with the disease we must first endeavour to remove the cause which produces it, and in cases of impending asphyxia, like the present, no treatment can be of any avail except the most prompt and active. Of the three causes of this disease mentioned by Dr. Hall, it appears that over-feeding, and consequently derangement of the alimentary canal, is by far the most productive. In such cases nothing but the most active purgation seems to have any effect; and it is astonishing how far infants will bear and require this treatment to be pushed while labouring under disease. After the cause is removed then we may have recourse to palliative remedies, and not till then. The external application of croton oil to the larynx might be of use in this disease.

Dr. Marshall Hall strongly recommends change of air and a young nurse in case the little patient has been weaned. Dr. Tweedie informs me that cold effusion to the head after the bowels being opened, has frequently banished this disease. Dr. Joy recommends tonics, as the sulphate of quinine, &c., after the cause is removed; he also states that antispasmodics too often disappoint expectation, and are of very secondary importance in the treatment of this disease. Dr. Merriman states that this disease, if attended to in time, will generally yield to aperients given so as to produce two evacuations daily. We shall now conclude this paper in the words of Dr. Joy, who says that "this disease, even in its simplest and mildest form should never be neglected, as, in the absence of every com-

plication, the *spasm of the muscles of the larynx alone*, has often proved suddenly fatal."

3, North Crescent, Bedford-square,
March 26, 1838.

MR. NEWPORT'S "SECOND REPLY" TO PROFESSOR GRANT.

To the Editor of THE LANCET.

SIR:—A letter from Professor Grant, inserted in THE LANCET of the 17th instant, obliges me again to request that you will allow me space for a few comments.

In my former "Reply" to Dr. Grant I stated, as I thought distinctly, the points of difference between him and myself; but the manner in which he confuses his views with mine, renders it necessary that I should again state shortly the difference of our opinions. It appears that he would still wish it to be thought that his views and mine of the *true motor column* in articulates are identical, and that my descriptions of the motor column refer entirely to the transverse nerves. Now, it is well known that I have never claimed the discovery of the transverse nerves of Lyonet, but only the pointing out some interesting facts in the anatomy of these nerves, as to the manner in which they pass over the ganglia, which the extract I gave from Müller's "Archives" in my "reply," will prove. The assignment by me of the function of respiration to these nerves, a function suggested by their distribution, was published in my paper in the "Philosophical Transactions," in 1832, *before the time at which Dr. Grant claims to have assigned that of motion to them*. Whether my function, assigned from their anatomical distribution, or that of Dr. Grant, from analogy, be correct, remains yet to be seen, but it is questionable whether Dr. Grant can any longer call these nerves the *true motor column*, since, in those animals in which they exist, they are distributed chiefly to the trachea and muscles of respiration, and since the structure to which he also assigned the function of motion in the scorpion, and which he considered the analogue of these nerves, has been proved to belong to the *vascular*, instead of the *nervous* system.

The existence of a distinct and true motor column in the nervous centre of articulates, I do claim to have first pointed out. This structure, or column, is not, however, situated loosely on the upper surface of the nervous chord, free and widely separated from the other parts of the chord, as Dr. Grant's *presumed* motor is, but placed beneath the transverse nerves, closely united to the inferior or ganglionic part of the chord, and gives off nerves to join with those which come from this same portion of the nervous chord. Its structure is that of two longitu-

dinal bands, best observed as they pass over the ganglia, where a line may be seen indicating its separate existence. This is the structure, then, for which I claim the function of motion, and which Dr. Grant, in his letters, carefully avoids to mention, and when obliged to speak of a motor column, confuses with the transverse nerves, which, as I have shown, certainly do not constitute the true motor column.

I have thus explained, a second time, that I had *assigned a function* to the transverse nerves *before any had been assigned to those very nerves by Dr. Grant*; that those nerves do not constitute, as he has described them, the *true motor column*, because of their particular distribution to the muscles of respiration and the tracheæ; and I have elsewhere shown that what he has referred to in the scorpion, as the *motor column*, does not belong to the nervous system, and consequently he has not yet described the *true motor column* in these animals. These facts, I trust, will prove that I have not been indebted to Dr. Grant for my opinions respecting the structure and functions of the nervous system of articulates.

This brings me to another part of Dr. Grant's letter, in which I think I may justly complain of his unfairness and misstatements. Conscious of the difference of our position in science, and the greater credit that would therefore be attached to his statements, he has attempted, in consequence of a little ambiguity in Lyonet's expressions, to pervert their true meaning, in order to show that I have been anticipated by this author. Lyonet describes, and in one instance, Plate IX., figures, the transverse nerves as connected to the chords which pass from the brain, or first ganglion, to the second, by means of two portions which seem ("*semblent*") to be continuous with the fibres of these chords, and which, converging, pass over the second ganglia to unite on the third, to form the first transverse nerves, "*la bride epiniere*;" but Dr. Grant, in stating this fact, has used the words "*columns*," and "*broad white bands*," as passing over the ganglia, terms which are not to be found in the description of Lyonet. Again, the whole sentence in Dr. Grant's last letter, beginning—"In the figure of Lyonet, then exhibited and described to the class, the transverse nerves are delineated as passing into *columns*, which extend over the upper surface of the ganglia, at both ends of the nervous axis, and as coming *always from and over the upper surface* of the chords, in the intervening parts of the axis,"—is quite unsupported by Lyonet's description; for, even in the sentence from which Dr. Grant has made the extract, he has thought fit to suppress the concluding portion, which is opposed to his statement, and the words of which are after "*qui en derive*,"—"ce que ne se remarque pourtant pas dans tous les