to convey fixed intelligence, it is unnecessary that a moving part should have it; but when it becomes a solid and fixed part, it then opens communication with the mind.

Thus far I have endeavoured to show that blood is as much endued with life as the solids are; and the only difference between the two is, that the solids have construction called organization, producing considerable visible effects, while the blood has not this construction, therefore does not produce these visible effects. This theory will appear more evident in treating of the diseases of the animal body.

ON THE

EFFICACY OF OXIDE OF ZINC IN LARYNGISMUS STRIDULUS.

TO THE EDITORS OF THE PROVINCIAL MEDICAL AND SURGICAL JOURNAL.

GENTLEMEN,—If you deem the following case of Laryngismus Stridulus worthy of a column in your valuable journal, I shall feel obliged for its insertion, as from the severity of the case, and the method of treatment that was persevered in, it may prove of some interest to your readers.

Your obedient servant,

JOHN WATERS, M.D.
M.R.C.S. Edinburgh.

9, Alfred Place, Bedford Square, May, 1841.

A child, aged ten months, brought up by hand, and whose dental developement proceeded but slowly, having but two teeth at the time of this report, but in other respects of good constitution, had enjoyed good health from her birth, with the exception of an attack of dysentery, which lasted about eight days, and from which she perfectly recovered; was reported by her nurse to suffer from a slight cough, accompanied with a peculiar whooping noise, which took place only during the night, and to be in the habit of starting up suddenly with these attacks from sleep, as if alarmed; but the cough did not always accompany them; she would struggle for breath as if respiration was obstructed, and, after repeated efforts, would commence to breathe with long and stridulous inspiration; she would occasionally get them during the day, if irritated. The appetite was good; bowels regular, but the dejections were of a dirty white colour; no vomiting observed by me during the day; there was nothing that particularly called attention to the child, so she continued in this state for about ten days, until the evening of the 2nd of January, when I had an opportunity for the first time of observing one of these fits of suffocation; her breathing was suddenly arrested, without previous coughing, the face became of a purplish hue, and, after the lapse of some twenty seconds, the long whooping inspirations came on, and expiration was distinctly heard, occasionally accompanied with a marked change in the cry; this state lasted for about the same period of time, when respiration was performed as usual, but somewhat accelerated; the expression of the child's face was now much altered, and in some short time afterwards she coughed rather violently, with an evident super-secretion of mucus: on percussion there was no

appreciable difference on either side of thorax, and though minutely ausculted, the respiratory murmur was audible everywhere, unaccompanied with rle; there was no inflammation, vascular redness, or apthous concretion in the throat or fauces, but there was observed a congenital malformation of the palate, for the uvula and palatum molle were absent, and a fissure of a triangular shape extended between the bones of the palate for about four lines; heat of surface natural, pulse rather quick. I gave her an emetic, consisting of tartar emetic one-eighth grain, with ten grains of ipecacuanha; it acted speedily and with evident relief; she also took the following mixture.

Castor oil, four drachms; gum mucilage, one oz.; laurel water, one drachm; tincture of conium, one drachm; fennel water, one oz. A teaspoonful every third hour.

On the two following days was much improved, as there was no return of the dyspnoea or cough, but on the morning of the 5th she was again suddenly seized, whilst in the act of playing, with another attack, as if the larynx had been tightly compressed; respiration ceased for about one minute, when the long stridulous inspirations were again heard, and forcible hurried expirations; the face became swollen, of a livid purplish hue, particularly, the lips and inside of the mouth; the eyes became prominent, with a very evident divergent strabismus of the left one; the hands and arms were rigidly extended: the lower extremities were in the same rigid state; the pulse quick and small: this state was followed by a violent fit of crying, which terminated in sleep, which lasted about three hours, and during sleep she started up with several less severe attacks, but on awaking she had one of longer duration; I then observed that the larynx was forcibly drawn lower in the neck than usual; the number of respirations was twenty-eight; no difficulty of swallowing; voice little changed; she did not evince pain on my pressing the larynx; the alvine dejections were still without a trace of biliary secretion; the two upper incisors were on the point of appearing; I lanced the gums, and ordered the following powders:

Calomel, ten grains; antimonial powder, two grains; divide into eight papers; one every second hour. Milk diet.

The paroxysms now increased, and in the evening I counted ten attacks which she had during the day; bowels relieved from medicine twice, bringing away a large quantity of mucus, tinged with green matter. The emetic was repeated, but she passed a bad night; started from sleep with the fits twelve times; she did not pass urine until late in the morning, and then in small quantity; warm sponges to the pubes relieved the distended bladder; strabismus continues during the fits. Continued the powders, with the addition of a small quantity of extract of belladonna, gradually increased; friction with ung. hydrargyri on the right hypochondrium; she refuses her food, and is very irritable; the countenance is exceedingly pallid, with dull expression; features much sharpened. She continued in this state, gradually getting worse, until the 14th, when, on attempting to administer a small dose of ol. ricini, she was suddenly seized with a most violent fit of suffocation, which lasted about five minutes, accompanied with the greatest distortion of countenance and general convulsive movements. Having quickly pro-

vided a warm-bath, she was plunged into it, and by compressing the chest with the hands placed on the sternum and spine, so as to induce a fresh supply of air to the lungs, I found that sensation and respiration slowly returned; I kept her in the bath twenty minutes, during which time her bowels were acted on; the excretions still had the same unhealthy appearance. After this attack she lay in the nurse's arms in a comatose state for nearly eight hours, though occasionally starting up with fits; seven leeches were applied to the temples; they bled profusely, and relieved the hyperemia of the cerebral vessels; she then got a brisk purgative of mercury and chalk, six grains; scammony, one and a half grain. Finding the paroxysms to have now increased to as many as twenty in the day and thirty at night, I called in my friend Dr. Hennis Green to see her.

Dr. Green advised that the gums should be freely lanced, and that every effort should be made to correct the state of the alvine secretions by strict attention to diet and by purgatives. It was also agreed that the oxide of zinc should be administered in gradually-increased doses. Four leeches were applied to the temples; the warm-bath was ordered to be employed every second day, and the following powders, which were commenced on the 18th: Oxide of zinc, one-sixth of a grain; compound scammony powder, one-half a grain; mercury and chalk, one grain. One powder to be taken every second hour.

19. Fits increased at night, twenty-five; stools still without biliary secretion.

22. Fits in the day, twenty; at night, twenty-nine. Zinc increased to one-quarter grain doses. She continued in this state without much improvement until the 28th, when the zinc was given in grain doses every second hour; bowels still deranged; considerably emaciated; character of fits as usual, but on the whole not so severe or frequent; sleeps a great deal, and always awakes with a fit; in day, fourteen; at night, eighteen.

30. Fits in day, ten; at night, eighteen; state of bowels not improved; gums again lanced; pulse small and quick; number of respirations, twenty-two. Takes beef-tea and biscuit powder—a warm-bath.

February 2. Fits in day, eight; at night, fourteen. Zinc now increased to two-grain doses every third hour; bowels a little improved; appetite better; in consequence of a severer fit than usual, had six leeches to temples to relieve congestion. During the first week of February the fits decreased a little, at the same time the child's health began to show some amendment; fits in day, eight; at night, nine.

9. Zinc increased to three grains every fourth hour; colour of stools nearly natural—gums lanced; fits in day, six; at night, seven; strabismus and rigidity continue during the fit. She continued in this progressive state, with little to remark, except a slight soreness of the mouth from the mercury, which was immediately suspended; the paroxysms are less frequent and severe, but the whooping or stridulous inspirations are more prolonged, and the suffocation is not by any means so alarming.

22. Fits in the day, four; at night, six; appetite and state of bowels improved; has got much better.

28. Improving, although the fits are as frequent

as at last report; zinc increased to three and a half grains every fourth hour.

March 10. Treatment continued; had no fit last night; stools perfectly healthy; appetite improved; expression of countenance natural.

22. Perfectly recovered, as there has not been a single return of the fits. She was now sent to the country, where her strength has perfectly recruited.

REMARKS.

Opinions have been much divided as to the nature of this affection, which has been variously denominated by the terms laryngismus stridulus, croup-like convulsion, the crowing disease, spasm of the glottis, thymic asthma, &c.; but if any other evidence were wanting, the above case proves that it is a mere convulsive disorder, not depending on any organic lesion of the brain or spinal marrow, but excited by some irritation of the sentient extremities of the nerves, or, in some instances, perhaps, kept up by mere habit. The little patient, whose case I have just related, dwelt in the same house with, and was anxiously watched by me; and close observation soon led us to detect the approach of the fit several seconds, or even minutes, before it actually became developed. In such cases we often prevented the access of the fit, by taking the infant gently up, and diverting its attention by the exhibition of some toy, &c. Were not the fit of crowing merely convulsive, in the same sense that hysteria or chorea is, it would be difficult to understand how its occurrence could be prevented, by merely diverting the attention of the little patient.

The chief exciting causes of laryngismus stridulus are unquestionably the irritations caused by the teeth during dentition, &c.; by improper food, or the influence of unwholesome air, &c. The latter, however, does not seem to act so frequently as writers assert, because this disease is extremely rare amongst the children of the poor in France; and in this country, from all that I have heard, it appears to prevail as much amongst the offspring of persons in easy circumstances as amongst the children of the destitute, and those who inhabit the crowded lanes and alleys of this great metropolis. In the case of my little patient, it is difficult to say whether dentition or derangement of the alimentary functions bore the greater share, as exciting causes of the malady. Although there was no redness or apparent tumefaction of the gums at any point, the infant cut two teeth towards the termination of the disease; the gums had been scarified once or twice, as a matter of precaution, and this operation was repeated several times during the course of the disease, according to Dr. Green's advice, but it did not seem to affect, in any well-marked manner, either the frequency or the duration of the fits. The comatose state in which this child frequently was plunged, the strabismus, tetanic rigidity of the body, &c., might to some persons seem to favour the idea of the cerebral origin of this complaint, a theory advocated by the late Dr. John Clarke; but they evidently depended on congestion of the brain produced by the violence of the fits, amounting almost to asphyxia, for they bore a close relation to the severity and length of the fits of crowing, did not exist at the commencement when these were mild, and disappeared when they were again moderated.

One of the most remarkable symptoms which presented themselves during the course of this severe disease, was the total suspension of the biliary secretion. Mercury was given with the hope of exciting a due secretion of bile, but had little effect, and the only purgative which seemed to produce anything like a healthy action of the bowels was scammony. It is, however, worthy of remark, that even when the stools were tinged with a due proportion of bile, the fits continued to be almost as frequent, and as protracted as before. It was then that Dr. Green suggested the use of oxide of zinc, from his experience of its efficacy in some of the convulsive disorders of children, and by a persevering use of this remedy we were enabled to conduct to a happy termination a case which had been the source of unceasing anxiety to the friends of our little patient, and to her medical attendants.

CONTRIBUTIONS TO THE PATHOLOGY OF CHILDREN.

By P. HENNIS GREEN, M.B.

LECTURER ON DISEASES OF CHILDREN AT THE HUNTERIAN SCHOOL OF MEDICINE.

CHRONIC HYDROCEPHALUS.

CASE I.—*Child nineteen months of age—measles—convulsions—gradual enlargement of the head—amaurosis—paralysis—tubercles in various parts of the brain—a quart of fluid in the ventricles.*

EUGENE THIALBANT, 19 months of age, was admitted on the 6th of December, 1833.

The head of this child was perfectly well formed at birth. For three months he was fed by the spoon, and then sent to nurse, where he remained until the age of 12 months. At this period he had the measles, and on the disappearance of the eruption was seized with convulsions, which recurred several times. He also continued to cough. After the lapse of a month, the head began to increase in volume, and the child was unable to walk any more; the face was alternately flushed and pale, and he was occasionally feverish. When the child was 18 months old, the head was so large, that he could no longer sit upright, and the power of vision was totally lost.

December 8. The head measures 23 inches from the most prominent part of the forehead to the occipital protuberance, and 26 inches from the chin round the apex of the crown. He is unable to support the head in any position; the fontanelles open; vision lost; pupils dilated and immovable; only six teeth; abdomen very tumid; bowels always constipated; paralysis of the lower extremities; upper extremities sensitive, and capable of executing some movements; pulse small, of natural frequency; respiration free; slight cough.

During the first fortnight no active treatment was employed, nor did any change take place in the symptoms. On the 27th, the child was seized with fever, accompanied by frequent cough and dyspnoea.

28. Cough extremely frequent without expectoration; extreme difficulty of respiration; pulse 150; respiration 54; skin very warm; abdomen free from pain; no diarrhoea or vomiting; lips dry and dirty; some aphthae on the lips and tongue.

22. Same cough and dyspnoea; bowels confined.

For the next two days the child continued to cough a good deal, but the general symptoms remained unchanged. On the 2nd of January the cough became more severe, and the dyspnoea more distressing; nevertheless, the following was the prescription:—Malloes, gum-julep, bouillon. This treatment was little calculated to check the thoracic affection, and the child died in a fit of suffocation on the 6th of January.

Body examined twenty-two hours after death.

There was no fluid in the great cavity of the arachnoid; membranes on the upper surface of the brain healthy; the cortical and medullary substances are also healthy, but the latter is almost reduced to a layer, by the distension of the lateral ventricles. These contain about a quart of clear serum. The thalami, and corpora striata are not altered in colour or consistency; at the posterior part of the left hemisphere, and on the surface, there is a large tubercle, which adheres to the dura mater; the surrounding nervous tissue is slightly softened; round this tubercle there are seven or eight smaller ones, some of them softened in the centre; on the inner side of the middle lobe of this hemisphere there are two other tubercles of the size of beans, and a third one in the anterior lobe. There are four tubercles of different sizes in the middle and posterior lobes of the right hemisphere. Finally, a tubercle was found in the corpus striatum and thalamus opticus of both hemispheres. In the cerebellum there were five tubercles: one on the median line, above; a second on the right lobe; a third and fourth on its lower edge; a fifth on the left lobe, softened in the centre; pons varolii and spinal marrow healthy.

Chest.—Lungs crowded with miliary tubercles and tubercular deposits, with inflammation of the pulmonary tissue in different parts. Bronchial glands tuberculated. Heart and pericardium healthy.

Abdomen.—The viscera contained in this cavity are all healthy. No tubercular matter in the mesenteric glands.

CASE II.—*Two years of age—convulsions—enlargement of head—paralysis—constipation—coma—a pint and half of serum in the ventricles.*

ROSE ROUSSEAU, two years of age, admitted July 21, 1834. The mother of this child has been subject to hysterical attacks, and has lost seven children from convulsions. The subject of the present case seemed to enjoy good health up to the age of fifteen months, when she was seized, without any known cause, with convulsions, which have frequently returned since then. Immediately after the first attack of convulsions, the head began to enlarge, and has now attained a considerable size; it measures twelve inches and three quarters from one auditory foramen to the other, (over the crown of the head,) and sixteen inches and a half from the most prominent point of the forehead to the occipital protuberance.

22. Both fontanelles are now widely open, and the child lies constantly on its back, in a state of stupor, being unable to support the head in an erect position: the limbs and muscles of the face