discomfort after meals." She further states that the severe headaches which she had been so constantly troubled with had disappeared. The spasmodic jerking of the limbs, from which she also suffered very frequently, had also gone. The walking powers had been practically quite regained. She can now walk at least two miles without stick or crutch, and with comfort.

A PRELIMINARY NOTE ON AN EPIDEMIC OF PARALYSIS IN CHILDREN

(ONE HUNDRED AND TWENTY CASES).

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DURING the past two months, through the intervention of Dr. C. S. Caverley, President of the Board of Health, and his colleague Dr. H. H. Swift, I was able to make some observations upon an epidemic of paralysis in children, which occurred in the State of Vermont. The epidemic commenced late in June, increased in July, and culminated in August, and though new cases are cropping up the malady has now almost abated. I obtained the notes of 91 cases out of 120 which were affected.

At first the belief was held that the outbreak was one of cerebro-spinal meningitis, and there were several cases presenting the characteristics of this disease. But on examination it appeared that such cases were very few, and in many there were no symptoms at all beyond paralysis. There was a general absence of retraction of the head, and flexing of the trunk. The sensory symptoms were not prominent, the headache was chiefly frontal, and, beyond some slight delirium of the ordinary febrile type, there were no psychical manifestations. The cutaneous symptoms were absent or unimportant. While in many cases there were indefinite rashes, in only one were there petechiæ, in none herpes labialis, mottling, purple spots, or the other undoubted cutaneous manifestations of "spotted fever."

The sequelæ and complications were also different. There was no account of pleurisy or pericarditis, and only in one case pneumonia. Neither the auditory nor any of the cranial nerves were permanently affected. The eye symptoms were wholly of central origin: no ophthalmia, no conjunctivitis, no keratitis, no permanent impairment of vision. From an examination of the records of all the epidemics of cerebro-spinal meningitis, and an estimate of such authorities as Randolph, Wilson, Niemeyer, Knapp, and Kreitmair, it would appear that the eye symptoms alone are sufficient to differentiate the present malady from cerebro-spinal meningitis. Indeed, Hirsch affirms that "conjunctivitis is almost always a constant condition."

I will set down brief notes of a few cases typical of groups into which the series seemed to fall.

CASE I.—S. C., a boy, aged 5 years, complained on June 17th of headache, chiefly frontal, with nausea and vomiting. The temperature was 102° F., and the pulse 115. This continued for twenty-two hours, and was succeeded by a soreness in the arms and legs, loss of reflexes, with gradually increasing paralysis, culminating after twenty-four hours in a complete powerless condition of both lower and both upper extremities, which still persists.

CASE II.—A. B., a delicate girl, aged 12 years, with a slight left lateral spinal curvature, fell sick of an attack resembling indigestion, with coated tongue and marked constipation. Gradually, without alarming symptoms, paralysis supervened, and in two days both arms and legs were useless. After five weeks there is no sign of improvement. In this case there was a real arthritis, quite as intense as in an ordinary attack of acute rheumatism, the pain not merely "supposed to be in the joints." (Gowers.)

CASE III.—A boy, aged 7 years, on July 4th, had a temperature of 103° F., and a pulse of 120. After three weeks the temperature suddenly dropped to 97°, and the pulse to 50. The knee-joints now became painful and swollen, as well as the elbow and shoulder. Paralysis of the left upper and left lower extremities followed, and still persists.

CASE IV.—In this case the preliminary symptom was double vision. A girl, aged 11 years, suddenly developed this condition, and for three days was slightly unwell. Next morning she was unable to get out of bed on account of complete paralysis of the left arm and leg. Fever, with delirium, followed for four days, when the symptoms abated, and now the limbs show some improvement. In this case the menstrual function was established during the progress of the disease.

In other instances there were no premonitory symptoms, and, without warning, the children would "stumble," and,

on examination, one or other of the limbs would be discovered in a paralytic condition.

The following may be taken as types of the fatal cases:

CASE V.—S. O., an Italian boy, aged 4, on July 21st became sleepy and complained of headache. He was found to have no fever, but a pulse of 45, slow, hobbling in character, and intermitting every fifth beat. This continued for four days, when a slight improvement was noticed. Internal strabismus occurred, but the child made a complete recovery, so far as symptoms were concerned, on the seventh day. He was then allowed to divert himself in the hot sun, when all the original symptoms returned—headache, squint, halting pulse, and drowsiness. This was on August 31st; by September 1st he was worse than at any previous time, but yet had no fever. Next day the knee-jerk was absent, but the plantar reflex was retained, as well as the cremasteric. The legs now became paralysed, and by September 3rd the paralysis was general, the eyes half closed, the pupils dilated and unequal; the temperature was 105° F. The child died at 3 o'clock the same afternoon.

CASE VI.—H. A., a Swedish child, aged 20 months. On August 31st it was stricken with fever, 103°, and the pulse rose to 120. The restlessness was extreme, the child moaning and tossing its limbs, but quite conscious. The head was slightly retracted and the pupils contracted unevenly. Next day the general symptoms were improved, but the child continued restless and in a highly excitable condition. On September 2nd the fever had disappeared, but the restlessness increased, with chronic spasm, strong grinding of the teeth, and paralysis of the left leg. Next day the temperature rose to 104°, the spasm increased, and general paralysis supervened. The child died in the afternoon.

In view of the fact that in many cases of cerebro-spinal meningitis the lance-shaped coccus, similar in all respects to the pneumococcus which Cornil and Babes regard as the cause of both diseases, has been found, it is worth remarking that pneumonia was present in only one case.

CASE VII.—E. F., a boy aged 4, was affected on August 8th, after a slight preliminary illness, with paralysis of both legs, and two days later developed pneumonia. Both conditions subsided, and now the child is in a fair way of recovery.

In a few the onset was accompanied by symptoms of transient spinal meningitis. Gowers believes that such condition must be regarded as a coincident effect of a common cause. I have also notes of six cases in adults, of which three were fatal, in two the paralysis persists, the other, a man aged 70, recovered. The ages were 19, 24, 27, 35, 36, and 70 years.

CASE VIII.—B. J., a lad, aged 19, complained of pain in the head and back. The pulse was 100, and the temperature 102° F. The fever subsided on the fourth day, the pulse fell to 56, and all pain had disappeared. The right arm now became paralysed, and by next morning the pulse was at 38, and the temperature 97°; the extremities were cold. Complete paralysis developed during the day, and in the afternoon the young man died.

The muscles in every marked case showed the degenerative reaction in a characteristic manner. The loss of faradic irritability was observed, and in many cases absolute, while the reaction to the constant current was increased. The muscles were variously affected. In some cases the whole arm was paralysed, in some only the intrinsic muscles of the palm, but the combinations of the different groups affected were endless. After an exhaustive tabulation of the muscles and groups affected, I was unable to discover any combinations which seemed to preserve any definite order. In the legs the extensor group was injured most frequently, and sometimes there was a functional association. The paralysis in every case was motor, and the only disturbance of sensation was hyperæsthesia.

The distribution of the paralysis was as follows, reduced to percentage:

Left arm alone	...	...	...	2.0 per cent.
Right arm alone	...	...	...	4.0 "
Both arms alone	...	...	...	2.0 "
Right leg alone	...	...	...	7.0 "
Left leg alone	...	...	...	20.0 "
Both legs alone	...	...	...	45.0 "
Left leg and left arm	...	...	...	8.0 "
Right leg and right arm	...	...	...	3.0 "
Both legs and left arm	...	...	...	2.0 "
Both legs and both arms	...	...	...	4.0 "
Right thigh...	...	...	...	1.0 "

The infection was confined to a definite area, fifteen miles long and twelve in breadth, with the range of the Green Mountains on the East, but no natural boundary on the other sides. The city of Rutland is in the centre of the area. It would be hard to discover a region in which a disorder had less licence to become epidemic: the whole district lies upon a series of terraces, and increased safety did not come with elevation. Indeed, four cases occurred on the very ridge of the Green Mountains, at an elevation of 1500 feet, and the line of the four dwellings extended over half a mile. The water supply was different in each of the four cases, namely, from springs out of the mountains. The range referred to

definitely limited the infected area, which occurred in a region with faults and dislocations in the earth's crust and profound breaks in the whole strata, while on the other side of the mountains the country is level and unfaulted. Neither overcrowding of habitations nor any of the evils usually accompanying or flowing from this condition were factors in the present case, since only in four families was more than one member affected.

It was quite usual for children to sleep with those who were affected and themselves remain entirely free from the disease. No isolation was practised, nor did such precaution appear to be of the slightest value. Indeed, the brunt of the disease fell upon the purely rural portion of the community. No clue was discoverable in the domestic and personal hygiene of those attacked. The houses were all detached, and in most cases there was nothing in the nature of privy or cesspool. Nor had penury any part in the epidemic. The district is one of the most thriving in the United States, and has been settled for a century and a-half. The food, water, and milk supply were examined, and were found above reproach. The food and milk are drawn from the neighbouring farms or from the farms in which the patients lived. The veterinary surgeons have remarked no unusual occurrence amongst the cattle, but twelve horses died of what was called cerebro-spinal meningitis. I was unable to procure any reliable account of these cases. A few cases of "paralysis" in fowls were observed. The summer was dry and hot, the springs scanty, and the surface water low. The rainfall for the three months was only 6.58 inches, against 11.95 last year and 15.04 the year before, on an average of 11.2 for the last forty-seven years. The average temperature was 64.3°, last year 64.4°, the year before 65.2°, and 65.4° on an average for the last forty-seven years. Cases were found amongst children of American, Swedish, Italian, French, Irish, and Jewish parentage, so that nationality appeared to have no bearing. There is in one place a colony of 1,000 Italian marble cutters, but amongst them there were only two cases.

The following table shows the results reduced to percentages:

Fatal cases	13.0 per cent.
Recovered	25.0 "
Improved	30.0 "
Unimproved	32.0 "

I have purposely refrained from giving further expression to any views or theories, since that can be done more adequately when the work in hand is at an end and the positive or negative value of the pathological and bacteriological results is ascertained.

NOTES ON A CASE OF ACCESSORY THYROID GLAND PROJECTING INTO THE MOUTH.

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A. S., a girl, 17 years of age, was admitted to the Golden Square Throat Hospital, under the care of Dr. J. W. Bond—by whose kind permission I am allowed to publish these notes—on June 2nd, 1894. She complained of a lump at the back of the tongue. It was giving no trouble, and had only been discovered two months previously, when her singing master examined her throat and noticed the lump there. Her speech was somewhat thick. She was an undersized but well-nourished girl. Situated at the base of the tongue, close to the position of the foramen cæcum, was a tumour about the size of a small walnut. The larger half of it was to the right side. It felt semi-elastic, and was immovable on the deep tissues of the tongue. It pressed backwards on the epiglottis, and when the tongue was pulled out it almost touched the base of the uvula and the soft palate (as in Fig. 1). The thyroid was normal. Under chloroform Dr. Bond cut the mucous membrane round about it with a pair of curved scissors. The tumour was fixed with a pair of tenaculum forceps and removed with the aid of a raspator and a Mackenzie's polypus snare. Bleeding was profuse, but was controlled by pressure on the base with a finger round which a piece of lint steeped in turpentine was wrapped, whilst the girl was turned almost on her face to allow blood to run out of

the mouth. There was no recurrence of hæmorrhage, and the patient made an uninterrupted recovery, the wound being healed in ten days. Microscopical examination showed the tumour to present the ordinary appearances of thyroid gland structure.

Fig. 1.

REMARKS.—Tumours which structurally resemble the thyroid gland are not infrequently met with in this region. They originate in connection with the lingual duct, a structure of embryonic significance. In the embryo a diverticulum takes place from the anterior wall of the pharynx, forming what is known as the thyreo-glossal duct, and about this the thyroid gland is developed. This duct opens at the base

Fig. 2.—Microscopic appearance of a portion from the centre of the tumour.

of the tongue at a spot represented in the adult by the foramen cæcum, and, passing downwards, bifurcates to form the isthmus of the thyroid, the branches uniting with the embryonic gland structure to form the lateral lobes. As development goes on the hyoid bone is formed, and in its growth divides the duct into an upper (lingual) and a lower (thyroid) portion. Both of these are obliterated, as a rule, when development is complete; but sometimes, in the newly-born child, a fine probe or bristle can be passed for a short distance along the lingual part from the foramen cæcum, between the genio-hyo-glossi muscles to the body of the hyoid bone, where it is continuous with a fibrous cord passing in front of it over the thyro-hyoid membrane and down towards the thyroid isthmus. Occasionally either of the two portions persists—closed at both ends—and gives rise to a dermoid cyst. It is in connection with this lingual portion of the thyreo-glossal