SOME AFFECTIONS OF THE THIRD AND FIFTH CRANIAL NERVES.

I. BILATERAL OCULO-MOTOR PARALYSIS.—II. OCULO-MOTOR PARALYSIS AND ANÆSTHESIA IN THE DISTRIBUTION OF THE FRONTAL AND LACHRYMAL BRANCHES OF THE TRIGEMINAL NERVE.—III. TRIGEMINAL PARALYSIS AND SPASM.—IV. CLONIC MASSETER SPASM OR JAW CHATTERING IN THE AGED.¹

Cases Observed in the Department for Diseases of the^a Mind and Nervous System of the Philadelphia Polyclinic.

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I. BILATERAL OCULO-MOTOR PARALYSIS.

CASE I.—W. H. O., aged 52 years; colored; married; laborer; native of Virginia; with an unknown family history; presented himself at the Clinic, April 9, 1893. He had a chancre in 1876, followed by a skin eruption. A few years later he contracted a second chancre, and subsequently had buboes and skin eruption, with falling out of the hair. He had no other illness until two years ago, when he began to suffer with pains in his legs, as though he had cramps. These pains continued for two weeks, during which time he was unable to walk. A short time after this he had a paræsthesia of the trunk which he described as feeling like a cord drawn tightly around his body. Since Christmas (1892) this sensation had been growing less in degree, although still present.

¹ Read before the Philadelphia Neurological Society, April 24, 1893.

The present trouble commenced last Christmas with sharp pains starting in the frontal region, and shooting over the head to the occipital region and the back of the neck. Soon the upper lid of the right eye drooped, causing ptosis of that side, which lasted two weeks. This improved, but he noticed a similar involvement of the left eyelid, and at the same time found that he was unable to see objects in certain positions.

On examination, April 9th, he had complete ptosis of the left eye and partial ptosis of the right. Movements of the eye internally, upward, and downward, are completely lost. Both eyes are drawn into the external

canthi and are immovable in any direction. Sensation is not impaired in the slightest degree, conjunctival reflex being present in both eyes. He does not complain of pain in the head or eyes, but still has to a certain extent the girdle sensation of some time ago. Examination of the knee jerks show that the left is present and easily reinforced, and the right is absent, but reinforcement will cause its appearance to a slight degree. He has no paralysis of any other part of the body, but constantly complains of vague pains throughout his body, and an annoying numbness of the hands.

The treatment has been anti-syphilitic and electrical. A mild galvanic current has been used for over a month

with marked improvement of the right ocular muscle and some on the left. The question of a possible tabetic condition of this case is "sub-judice;" more probably he has suffered from a form of syphilitic myelo-neuritis.²

II.—OCULO-MOTOR PARALYSIS, AND ANÆSTHESIA IN THE DISTRIBUTION OF THE FRONTAL AND LACHRYMAL BRANCHES OF THE TRIGEMINAL NERVE.

CASE II.—W. B. T., 60 years of age; white; male; without occupation; a native of Connecticut; came to the Clinic, March 29, 1893. Thirty years ago he contracted

a chancre, but has no positive history of further specific disease, although eight years ago he had suffered with a small sore on the right upper arm which did not tend to heal until after he commenced treatment with iodides and mercurials.

In January, 1893, he sold tickets in a small room heated by a gas stove. The cold air came through the small ticket window and was constantly striking him in the right side of the face. Within a week he was seized with sharp pain in the eyeball and right frontal region, which was followed in a short time by the appearance of an

² Gowers: (W. R.) *Disease of the Nervous System*. Am. Ed., Philadelphia, 1888, p. 614.

herpetic eruption extending from the median line over the right frontal and temporo-parietal regions, and the face immediately under the orbit, and probably involving the conjunctival surface of the eyelids. Two weeks later, the eruption continuing, sensation of burning became noticeable, commencing in the side of the nose and extending over the location of the eruption. They were abrupt and transient in character, not more than two or three in a day, but at times so severe as to cause a feeling as though the part was being scalded. At this time the patient noticed that the right upper eye-lid was paralyzed. He does not know, however, when the ptosis became complete. The right eye seemed to be somewhat sore at first, and later became very much so.

His condition March 29th was noted as follows: The remains of an herpetic eruption is still seen scattered over the right forehead and temporo-parietal regions as far back as in a line with the posterior border of the ear; it extends all over the eyelids, but does not involve the ear or cheek at all. Over this area there is complete anæsthesia; the cornea is also insensible to touch. There is complete ptosis of the right eyelid, and much inflammation of the eye, both conjunctival and tarsal. The cornea is cloudy, but there is no ulceration. The movements of the eyeball performed by the internal rectus, superior and inferior recti, and inferior oblique muscles are completely lost. Both cycloplegia and iridoplegia are present.

The chief interest in this case is the simultaneous involvement of two cranial nerves and the consequent question as to the pathological process underlying it. The complete paralysis of the oculo-motor nerve, and the incomplete loss of power of the first division of the trigemini suggest the possibility of a double lesion. That the affection of the fifth nerve is peripheral is proved by its peculiar distribution. Ranney³ says that "peripheral

³Ranney: (A. L.), *Lectures on Nervous Diseases*. Philadelphia 1888, p. 83.

lesions of the fifth nerve cause anæsthesia of special parts supplied by small branches or single filaments of the nerve." In this case the trouble seems to be confined solely to the frontal and lachrymal branches of the ophthalmic division of the fifth nerve.

The pathology of the condition is more difficult to determine. Erb⁴ regards anæsthesia of the trigeminus as frequently of inflammatory origin. In the present instance the history of syphilitic infection, of exposure to cold, the presence of pain and trophic disturbances, and the absence of symptoms of intracranial trouble, all point to an inflammation, syphilitis or rheumatic in character, preferably the latter, affecting the nerve.

The oculo-motor nerve became affected while the trouble with the trigeminus still existed. The probability of the same local lesion causing both the oculo-motor and trigeminus paralysis has to be considered. Owing to the anatomical relations of these two nerves, the question of extension by contiguity of structure cannot be accepted, hence we look further. The history of the case shows that the patient has had syphilis, but years ago. Gowers⁵ recounts a case of oculo-motor palsy, where thirty years had elapsed since the infection. He claims that the nerves may be the seat of syphilitic inflammation, or of a gumma, or may be involved in a syphilitic meningitis.

De Schweinitz⁶ regards syphilis as the most frequent cause of third nerve palsy, the resulting paralysis being due to a peripheral inflammatory or gummatous change affecting the nerves at the base of the brain. Cycloplegia, the same authority says, is due to lesion of the trunk of the oculo-motor nerve or the anterior part of its nucleus.

Iodide of potassium was prescribed in large and increasing doses and galvanic electricity was used three

⁴ Erb: Ziemssen's *Cyclopedia of the Pract. of Med. Am.*, Ed., Vol. XI., p. 224.

⁵ Gowers: *Op. cit.*, p. 614.

times weekly. At present, nearly two months after coming to the service, he is able to separate the lids almost fully, the external movements of the eye are nearly perfect, the internal movements are improved, but not to so great a degree as the others. The anæsthesia is better and the eruption fast disappearing.

III.—TRIGEMINAL PARALYSIS AND SPASM.

CASE III.—J. T. W., aged 46 years; male; married; a carpenter; native of Maryland; family history good; came to the service for Nervous Diseases of the Philadelphia Polyclinic, March 22, 1893. December 1, 1892,

he was affected with an acute cold,—coryza, cough, etc. About the first week in January, 1893, he noticed for the first time that he could not chew as well as formerly. He was especially weak when trying to bite. This weakness of the muscles of mastication increased, and in the course of two or three weeks the muscles became powerless to such an extent that the lower jaw was not held in position against the upper. Ability to crack the jaws together was variable. In the latter part of February the jaw became affected with a tremor, causing chattering or clonic spasm, and occasionally the jaws would come

^a de Schweinitz: (G. E.) Diseases of the Eye, Philadelphia, 1893, p. 528.

together involuntarily. About the beginning of March, he became unable to close the mouth except with external assistance. There was no loss of sensation.

He is a fairly well-nourished man, without any paralysis of the limbs or trunk, but with a peculiar appearance of the face. The chin is dropped, causing a separation of the teeth of about one-quarter to one-half inch, with the lower lip somewhat everted and pendulous. Attempts to bring the jaws together cause the tremor. Movements of the lips and other portions of the face supplied by the seventh nerve are preserved. Sensation is preserved. The movements of the temporal, masseter, buccinator and pterygoid muscles are all impaired.

The patient is unable to swallow food that is wholly masticated, and at the same time hold in his mouth the part that is not masticated. In order to swallow fluids he must push his mouth shut after the drink is taken, and drop his head towards his chest, else what is taken in will regurgitate through his nose. Once in a while fluids get into his trachea. Warm drinks are especially irritating. The act of swallowing is very peculiar: during it a part of the fluid seems to go down by gravity, then a spasmodic action of the muscles of the front of the neck takes place, and some goes down and some regurgitates through the nose. Apparently the movements performed by the digastric, mylo-hyoid and stylo-hyoid muscles are affected, and those of the tongue seem also to be impaired. Electrical examination of the affected muscles showed contractility to both currents without any change in the normal formula, but an unusual slowness of response, most marked when the faradic current was used.

The palatal muscles contracted to irritants somewhat imperfectly. The constrictors of the pharynx contracted perhaps a little less actively than usual; the vocal cords and arytenoids moved perfectly. In drinking he was unable to get the water far enough back for the constrictors to act. Laughing gave the upper part of his face a peculiar appearance, somewhat like the risus sardonicus.

The fields for form and color showed moderate concentric contraction.

There were no changes in the electrical reaction except as noted, which practically barred out a peripheral affection. The case seemed to be either nuclear or hysterical. The patient was put upon general building remedies with the supposition that the disease might be hysterical, or, at least, functional. Iron, quinine, and strychnine in good doses were administered internally, and were combined with local treatment, with massage and faradic electricity. After four weeks' treatment, improvement was very noticeable. He was better able to swallow liquids and the regurgitation through the nose was less marked,—in fact, often absent. Two weeks without any local treatment did not result in retrogression.

IV.—CLONIC MASSETER SPASM OR JAW CHATTERING IN THE AGED.

CASE IV.—M. K., aged past 70 years; white; widow; native of Ireland; can tell nothing of the family history, and little of her personal history. She was well six months ago when she first noticed a "peculiar quivering sensation in the region of the stomach," which was followed by a desire to vomit, and sometimes by the complete act of vomiting. Immediately after these symptoms a movement of the lower jaw would occur, lasting less than a minute, but frequently repeated. This state of things has continued to the present time and her condition is as follows:

The woman is of worrisome disposition and can think and talk of nothing but her troubles. Her general health is poor. Her face is intermittently involved in bilateral spasm or twitching of the masseter muscles. The spasm is clonic in character and not attended with pain. The intervals of stoppage vary from a few seconds to almost a minute, and if her attention is diverted the period will be even longer. So far as is known the movements cease during sleep, but do not entirely stop when

mastication is attempted. The spasm is not very regular and an attempt to count the number of oscillations was fruitless.

This class of cases is spoken of by Gowers' as rare and occurring principally in old women. Romberg* cites a case in a woman, aged sixty-five years, in whom there was marked clonic spasm of the masseter muscles, principally the right, which always became worse towards evening and ceased during sleep.

"Spells" or Periodicity in Insanity.—R. M. Phelps, M.D. (*Hospital Bulletin*, November, 1892). From a study of periodicity occurring in various classes of cases, Dr. Phelps formulates the following:

First, the class of cases that have menstruation as exciting cause, seems to be the most obtrusive and prominent.

Second, the class of cases with somewhat regular exacerbations is the largest, but in a large proportion of cases ill-defined.

Third, the class of "recurrent" cases, which have exhibited a cyclical tendency is rather small.

Fourth, "Circular Insanity" is only the most perfect form of the some cyclical tendency, and is very rare if confined to typical cases.

Fifth, in all the four classes, there is reproduced almost invariably, the same character of behavior at each cycle, while in contradistinction no two separate cases at all closely resemble each other.

Sixth, almost all cases begin in the early period of life. This is as significant an element as any to be mentioned. It fits into the statement that periodicity, and essentially degenerative tendency, go with pubescent cases.

Seventh, the cycles are so irregular as to time as to strongly tend to preclude their coincidence with any healthy physiological cycles.

Eighth, though these cycles are almost sure to return, one cannot predict the exact time in any case I have met. I always have to say about "such a time." F. P. N.

* Op. cit., p. 639.

* Romberg : Diseases of the Nervous System, Syd. Soc. Trans., 1853, Vol. I., p. 301.