Weeks (J. E.)

"LA GRIPPE"

As a Cause of Retro-bulbar Neuritis and other Ocular Nerve Lesions.

BY

JOHN E. WEEKS, M. D.,

SURGEON AT THE NEW YORK EYE AND EAR INFIRMARY.

REPRINTED FROM

The New York Medical Journal

for August 8, 1891.

Reprinted from the New York Medical Journal for August 8, 1891.

"LA GRIPPE"

AS A CAUSE OF RETRO-BULBAR NEURITIS AND OTHER OCULAR NERVE LESIONS.*

By JOHN E. WEEKS, M. D.,

SURGEON AT THE NEW YORK EYE AND EAR INFIRMARY.

Various writers within the last two years have endeavored to show that in a limited number of cases the prevailing epidemic of influenza, commonly known as *la grippe*, has been responsible for almost all of the many forms of inflammatory diseases of the eye. Badel (1) mentions catarrhal and follicular conjunctivitis, blepharitis ciliaris, eczema, hordeolum, phlegmon of the sac; Copez (Brussels), croup and diphtheria; Galezowsky (2), episcleritis; Badel, eruptive and suppurative keratitis, iritis, and irido-chorioiditis; Guttmann (3), keratitis dendritica; Hosch (4), purulent irido-chorioiditis; Laqueur (5), embolic irido-chorioiditis and embolism of the central artery of the retina; Hosch, suppurative hyalitis; Adler (6) and Eversbusch (7), acute glaucoma; Fuchs (8), Bergmeister (9), and Scharpringer (10), suppurative and non-suppurative tenonitis;

* Read before the Section in Ophthalmology and Otology of the New York Academy of Medicine, May 18, 1891.

Valude (11), phlegmon of the orbit. The evidence adduced for considering some of the above-mentioned conditions to be due to *la grippe* is extremely meager. We can not see that blepharitis ciliaris, eczema, croup, diphtheria, episcleritis, and acute glaucoma are other than of accidental occurrence during an attack of this disease. The extensive and severe inflammatory conditions induced in the mucous membranes of the upper air-passage make it highly probable that simple and muco-purulent conjunctivitis is induced by *la grippe*, and the frequency with which these forms of conjunctivitis accompany this disease is proof sufficient. It is possible that the suppurative processes mentioned above are as certainly due to the pathogenic agency in the production of *la grippe* as are the conjunctivites, as it has been shown by Fuchs that the micro-organism so fully described by Klebs (11), Weichselbaum (12), Babés (13), and others was present in at least one case of purulent tenonitis observed by him. However, there remains much to be proved to make this possibility a certainty.

La grippe appears to be a disease which possesses an affinity for nervous tissue, the symptoms produced being largely those that can be explained on this hypothesis alone —the effect on the sensory nerves producing the definite and indefinite pains experienced in various parts of the body; on the nerves of special sense, producing disturbances in the senses of taste, of smell, of vision, and of hearing; on the motor nerves, producing the various paralyses that have been observed; and on the vaso-motor system, inducing the chilly sensations at first, and later the congestions, of lungs, mucous membranes, and other tissues, by first contraction of the lumen of vessels from initial irritation, and later by paralysis of vaso-motor branches. Although severe implication of the central nervous system, causing death, has been observed, the manifestations of influenza in the nerv-

ous system have most frequently been in the form of peripheral neurites, and it is to these conditions as they affect the eye that I will now call your attention. The conditions that have deen observed, referable to peripheral neuritis, are periorbital and orbital neuralgia, anæsthesia of the cornea, eruptive keratitis (herpes), paralysis of the accommodation, paralysis of the superior rectus, paralysis of the external rectus, paralysis of the muscles supplied by the motor oculi, one-sided ophthalmoplegia externa and interna, paralysis of the cervical sympathetic on one side, with prominence of the globes, paralysis of the facial, and retro-bulbar neuritis.

Migraine and orbital neuralgia as symptoms of *la grippe* are well known and need no elaboration.

Anæsthesia of the cornea has been noticed by Galezowsky, reported by Gazis (14), and by Bergmeister. The condition was uniocular in some and binocular in other cases. Complete recovery of sensibility occurred in a few days.

Paralysis of the accommodation has been observed by Bergmeister, D'Eperon (15), and by Gorecki (16). The two observed by Bergmeister are typical and are as follows:

Case I.—Boy, aged twelve years, had influenza three weeks previous, at which time he suffered from great pain in the head and had a high temperature lasting three or four days. St. Pr.: Pupils enlarged. V. in each eye is $\frac{6}{5}$ for distance. Reads J. 6 at 60 ctm. With + 3 Ds. reads J. I at 20 ctm. Recovery.

Case II.—Female, aged thirty-five years, recovering from influenza. V. in each eye equaled $\frac{1}{2}$; with + 1 Ds. V. equaled $\frac{6}{6}$; with a + 3·5 Ds. V. equaled J. j at 10 to 20 inches. Interior normal. Pupils wide. Recovery.

Of paralysis of the extrinsic muscles Badel reports two cases as follows:

Case I.—Male, aged thirty-three years, employed in the military bureau. No rheumatism, no syphilis. The patient had an attack of *la grippe* with severe cephalalgia lasting three or four days. At the beginning of convalescence the patient began to see double. Examination showed paresis of the muscles supplied by the third nerve on the right side amounting to paralysis of the superior rectus. There was no mydriasis or loss of accommodation. Recovery took place slowly.

Case II.—Male, aged fifty-seven years. No rheumatism or syphilis. At the close of an attack of influenza, which lasted six days and was accompanied with severe cephalalgia, patient noticed that objects at a distance appeared double. Examination showed paralysis of the right external rectus. At the end of five days double images could only be produced by putting a red glass before one eye. Recovery rapid and complete.

Uhthoff (from an extract by G. Lynn, *Sem. médicale*, 1890, p. 307) mentions a case of paralysis of the accommodation complicated with progressive ophthalmoplegia externa with symptoms of bulbar paralysis.

Greiff (17) reports a case of paralysis of the left cervical sympathetic occurring in a patient of thirty-one years. There was enlargement of the left thyreoid gland, the globes were prominent, and the heart action was rapid and irregular. Ptosis of the right upper lid developed.

Of neuritis of the optic nerve the retro-bulbar form has been most frequently observed. Papillitis has been noticed in some of the cases, five of which I have found reported. They are briefly as follows:

Case I (reported by Gazis).—Female, aged eighteen years. Attack of influenza in January, 1890, accompanied with severe frontal cephalalgia. Six days after the attack, failure of the vision of the right eye was noticed. At the end of three weeks, at which time she consulted Dr. Galezowsky, the vision had improved a little. Vision now equaled $\frac{1}{8}$. The ophthalmoscopic examination showed the papilla to be congested and œdematous

as compared with the fellow-eye. Slight paling of the disc resulted after some weeks. The vision became almost normal.

Case II (reported by Vignes (18)).—Female, aged twenty-seven years, was first seen on January 20, 1890. Two weeks previous the patient had had a severe attack of influenza. Frontal cephalalgia had been intense. On the eighth day after the beginning of the attack the patient noticed that she could only see the upper part of objects with the left eye. On the following day the vision declined to nothing. The ophthalmoscopic examination showed no change in the right eye. The pupil was dilated in the left. Papilla œdematous, slightly elevated; margins hazy, arteries very small, veins but little changed. No arterial or venous pulse.

January 31st.—Papilla not so swollen. L. E. V. equals perception of light.

February 7th.—Patient sees movements of the hand.

June 28th.—V. = $\frac{3}{100}$. Disc very pale.

Gutmann reports three cases as follows:

Case I.—Female, aged fifty-eight years. A few days after the commencement of an attack of influenza the vision began to fail in both eyes. When the patient was examined the vision equaled $\frac{1}{7}$ in the right eye and $\frac{1}{3}$ in the left eye with correction glasses. Hyperæmia of the papillæ was present. The patient had incipient cataract.

Case II.—Male, aged fifty-two years, had *la grippe* in January. Eight to fourteen days after the attack began vision failed rapidly, and continued to decrease until the patient was unable to distinguish people passing on the street. At the same time there was weakness of the legs. There was no syphilis. Urine normal. Patient was not intemperate. When seen the V. R. E. = $\frac{1}{14}$; V. L. E. = $\frac{1}{5}$. The fundi were normal. There was a relative central scotoma for white and colors of about 20° in the right and 10° in the left eye. Before his illness the patient had read fine print with either eye with a + 1·75 D. Pupils normal. Incipient cataract both sides.

March 11th.—V. R. E. = $\frac{4}{9}$; V. L. E. = $\frac{4}{6}$.

Case III.—Male, aged fifty-five years. Influenza in February. Had great pain in the region of the eyes. Failure of vision began a few days after the commencement of the disease.

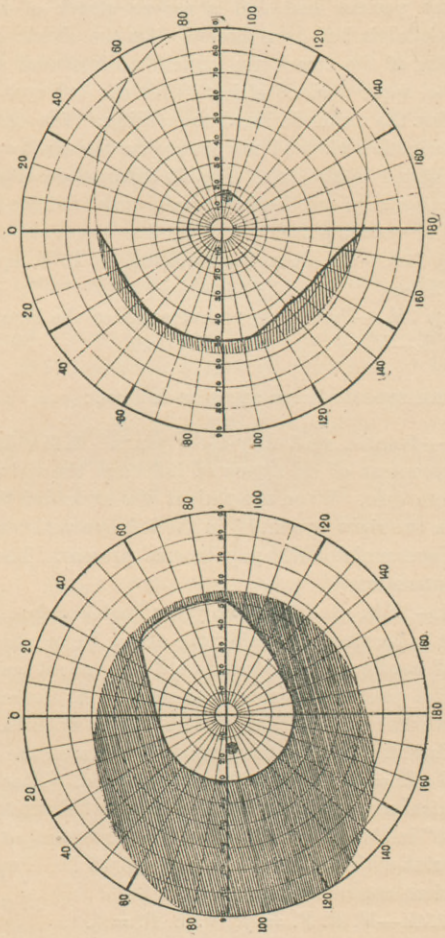


Fig. 1.—Case I (D'Eperon). Right eye. Left eye.

March 1st.—V. equaled $\frac{4}{6}$ in each eye. Concentric limitation of fields, with central relative scotoma for white and for colors of about 16° in both eyes. Papillæ hyperæmic. Veins dilated and tortuous. Arteries smaller than normal. Delicate cloudiness of the retina above and inward.

May 5th.—V. equals $\frac{14}{15}$; a ring scotoma has taken the place of a central scotoma. No history of syphilis.

In the following cases no papillitis was observed. Possibly it had existed in the early stage of the affection. D'Eperon reports six cases:

Case I.—Male, aged thirty-six years. Had influenza, with severe cephalalgia, in January. The vision began to fail very shortly afterward. St. Pr.: L. E. V. = $\frac{1}{100}$; R. E. V. = $\frac{1}{15}$.

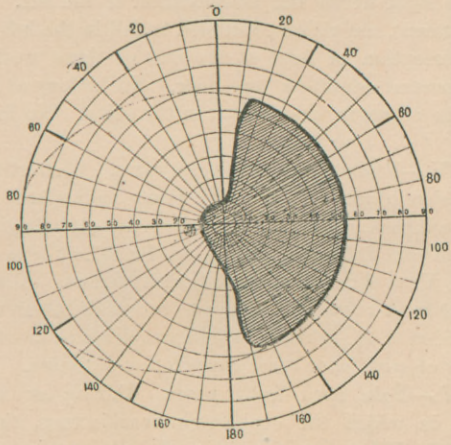


Fig. 2.—Left eye. Case II (D'Eperon).

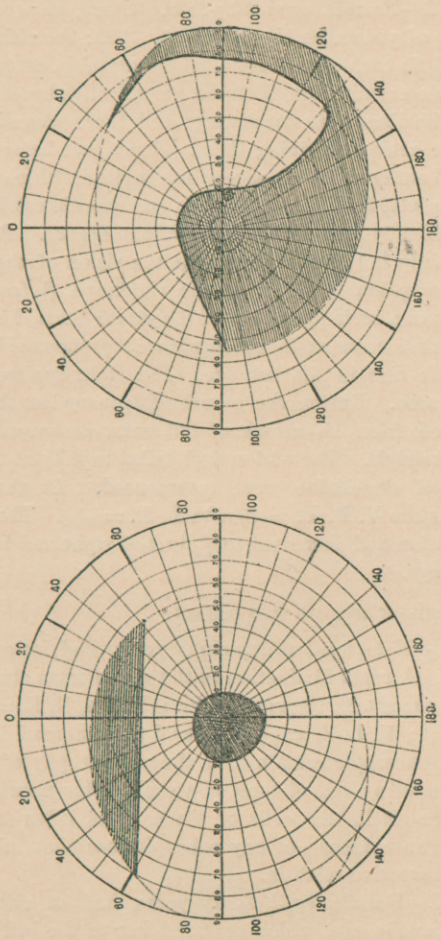
The fields of both eyes are contracted from the periphery. There is a central scotoma for red and green in the right eye. Ophthalmoscopic examination reveals partial atrophy of the nerves. No symptoms of tabes. Does not use alcohol or tobacco to excess. Treatment without results. (See charts.)

Case II.—Female, aged thirty-five years. Had suffered from a severe peri-orbital neuralgia for a few days before she noticed a diminution in her vision—probably a light attack of *la grippe*. Five weeks ago the vision of the left eye became very much reduced; it now equals $\frac{1}{100}$. Examination of the field of vision discloses an absence of almost the entire nasal half, including the point of fixation (see chart). Right eye normal in every respect. Diagnosis, retrobulbar neuritis. Treatment without result.

Case III.—Female, aged forty years. During a severe attack of influenza, accompanied with severe cephalalgia, vision began to fail. The right eye became almost sightless in a single night. Vision of the left eye is failing rapidly. St. Pr.: V. R. E. = 0; V. L. E. = $\frac{4}{10}$. Tension not increased. Field of left eye not contracted. Ophthalmoscopic examination shows atrophy of the right nerve and discoloration of the left. In spite of all treatment, the vision continued to fail in the left eye, and equaled perception of light at the end of three weeks. The patient's general condition was poor. No history of syphilis. No albumin or sugar was present in the urine. No locomotor ataxia.

Case IV.—Female, aged nineteen years. A short time before the vision began to fail the patient had suffered from an attack of influenza, accompanied with severe cephalalgia. First examination on July 9th, 1890. St. Pr.: Left eye normal. Right eye, V. = $\frac{2}{10}$; not improved with glasses. Visual field concentrically narrowed. The treatment produced an improvement in vision to $\frac{4}{10}$, which was unchanged three months later. No history of syphilis or other constitutional disease.

Case V.—Male, aged forty years. During an attack of *la grippe*, in which the cephalalgia was intense, the vision began to fail. When seen the vision of the left eye equaled $\frac{1}{100}$. There was a central scotoma and a scotoma of about one third of the upper part of the field (see chart). The vision of the right eye was $\frac{1}{1000}$ (?). The field was free only in an irregular crescentic patch in the upper part (see chart.) Central vision was absolutely abolished. Ophthalmoscopic examination showed discoloration of the discs. No history of tabes



Right eye.

Left eye.

FIG. 3.—Case V (D'Eperon).

or syphilis. After some time the vision of the left became somewhat better; that of the right diminished to almost nothing, although the patient was carefully treated.

Case VI.—Female, aged fifty-four. Came, on account of a diminution of vision, on November 12, 1889; the vision at this time was $\frac{7}{10}$ in each eye. Visual fields normal in extent. Ophthalmoscopic examination disclosed partial atrophy of the optic nerves. The discs were not distinct and there was slight haziness of the retina adjoining them. Some time before this the patient had suffered from a severe hæmorrhage, which was supposed to be intestinal. At this time she was almost blind, but she had gradually recovered to the present degree. Patient returned on July 1, 1890; at this time the vision of the left eye equaled perception of light; of the right eye, $\frac{3}{10}$ (see charts). There was concentric limitation of the visual fields of both eyes. The ophthalmoscopic examination showed pronounced atrophy of the optic disc in the left eye. The right eye remained as when first seen. During the month of January last the patient had suffered from an attack of influenza, accompanied with severe cephalalgia. The vision had failed rapidly at this time. Injections of strychnine were commenced. At the end of twelve days the V. R. E. $= \frac{8}{10}$; V. L. E. $= \frac{1}{100}$. Three weeks later the vision had decreased to $\frac{2}{10}$ in the right and to nothing in the left eye.

Bergmeister reports two cases:

Case I.—Male, aged thirty-eight years, had influenza four weeks ago. A rapid diminution in the vision was noticed a few days after the attack began. St. Pr.: Vision, R. E. = perception of light; V. L. E. $= \frac{2}{200}$. Visual fields normal in extent. The ophthalmoscopic examination showed atrophy of the optic nerves, presenting the picture of atrophy after neuritis. The vessels were small, the walls of the arteries being thickened. There was no evidence of any other disease that might have stood in a causative relation.

Case II.—Female, aged thirty years, had an attack of *la grippe* six weeks ago, which confined her to the bed for a few days and to the house for four weeks. She suffered severely from a left-sided cephalalgia. The vision of the left eye began to fail soon after the attack of influenza began, and progressed rapidly. The patient states that she saw better with her left

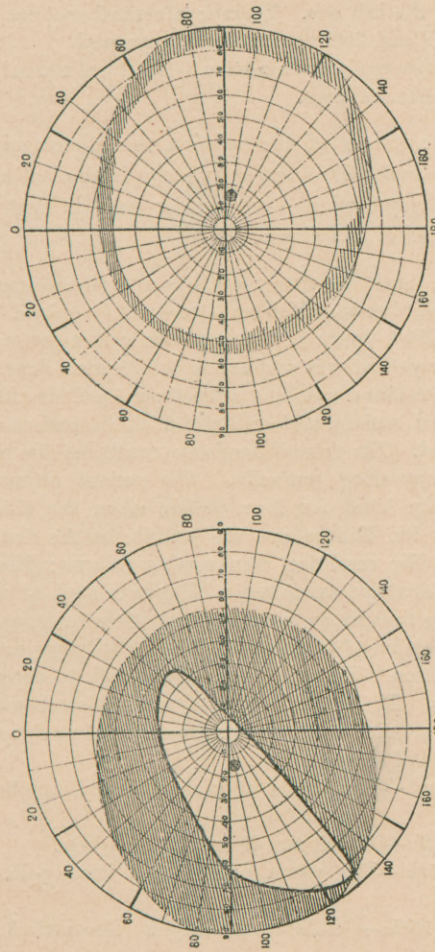


Fig. 4.—Case VI (D'Eperon). Right eye. Left eye.

eye than with her right before her illness. St. Pr.: Vision of the R. E. = 1; L. E. = $\frac{1}{3}$. Patient reads J. 5 with diffi-

culty with the left eye. There is a central scotoma for green and red. Visual field concentrically narrowed.

Ophthalmoscopic Examination.—Right eye normal; left eye, disc pale, arteries small.

Bergmeister is of the opinion that there might have been some papillitis in the early stage in the last case.

A well-reported and very clear case is that of Hansen (19), and is as follows:

Female, aged fifty-five years, has always had good health. No systemic disease. Had an attack of *la grippe*, beginning March 20, 1890, severe frontal headache coming on a few days later. The patient was confined to bed for some days. A diminution in the vision was first noticed on April 8th, after which time it failed rapidly, and on April 11th the patient was completely blind. The frontal headache continued for about four weeks, disappearing gradually. The patient claims to have been entirely blind for four weeks, when the vision began to return. Dr. Hansen saw the patient for the first time on May 22d. The condition then was as follows: Media transparent. Refraction emmetropic. Pupils dilated *ad maximum*, not reacting to light or to movements of convergence. Vision equals perception of light in both eyes. Faulty projection. Eccentric fixation. No nystagmus. Impossible to determine the visual fields. The ophthalmoscopic examination shows the discs to be pale, arteries small, veins somewhat enlarged, retina pale. No evidence of inflammation.

Treatment.—The iodide of potassium and strychnine were given.

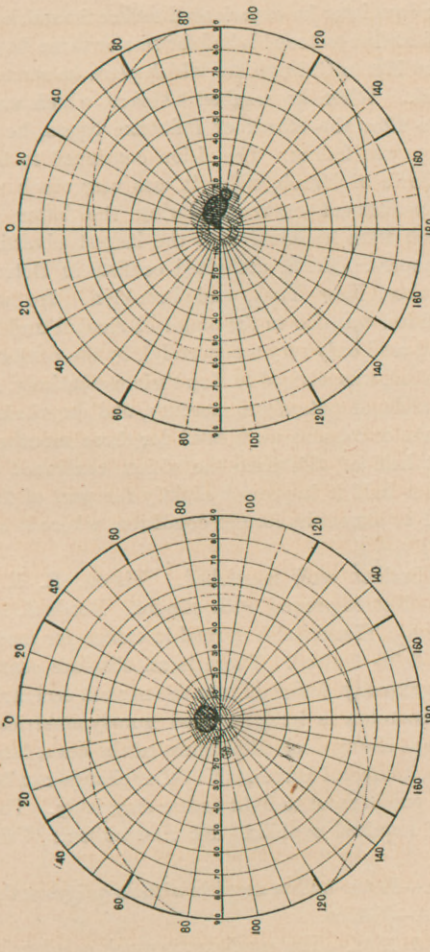
June 12th.—Patient can discern large objects.

July 15th.—The vision equals $\frac{5}{200}$. Discs pale. Vessels normal.

August 15th.—Condition unchanged. Eccentric fixation.

My own case is as follows:

William S., aged twenty-four years, came to my office December 29, 1890, having been sent to me by my friend, Dr.



Right eye.

Left eye.

FIG. 5.—W. S., February 3, 1891.

Frank Miller. The patient gave the following history: During the last week of January, 1890, he had suffered from an attack of *la grippe*, which began with coryza and muscle pains, with fever.

Three or four days later he experienced severe frontal headache, which compelled him to keep his bed for two or three days. His business called him to Chicago, for which place he started while still very weak. When he reached Chicago, which was seven or eight days after the attack of influenza began, he noticed that his vision was failing. The vision continued to fail until about the middle of March, when it was very much reduced. A slight improvement occurred during the latter part of April, at which time he could read the largest advertisements in the newspapers. Mr. S. consulted oculists in Detroit, Chicago, Milwaukee, New York, and Brooklyn. He was told that his condition was due to the abuse of alcohol and tobacco (which he had used only very moderately), by the oculists whom he first consulted, was advised to stop their use entirely, and was put on the iodide of potassium, mercury, and strychnine. No alcoholic drinks or tobacco were used for three months. During the first half of this time the vision continued to fail; during the last half it improved slightly for part of the time, then dropped to almost its former condition, where it has since remained.

St. Pr.: Patient well nourished. Vision, R. E. $= \frac{20}{200}$; L. E. $= \frac{10}{200}$. Not improved with glasses. Reads J. 13. Excentric fixation. Visual fields normal in extent for moving objects. Color fields limited. There is an absolute central scotoma which gradually shades off into the normal eccentric visual fields. The scotoma is irregular and non-symmetrical. The ophthalmoscope shows decided paleness of the discs, much more decided in the temporal halves. No other change can be determined. The pupils react to light rather sluggishly. There was no history of acquired syphilis. No rheumatism. Urine normal.

Diagnosis.—Retro-bulbar neuritis with *la grippe* as the cause.

Treatment.—Tonics.

February 3, 1891.—The condition is much as when last seen (see charts).

April 18th.—Vision, R. E. $= \frac{20}{200}$; L. E. $= \frac{18}{200}$. Reads J. 11 with difficulty. The charts of the visual fields show a de-

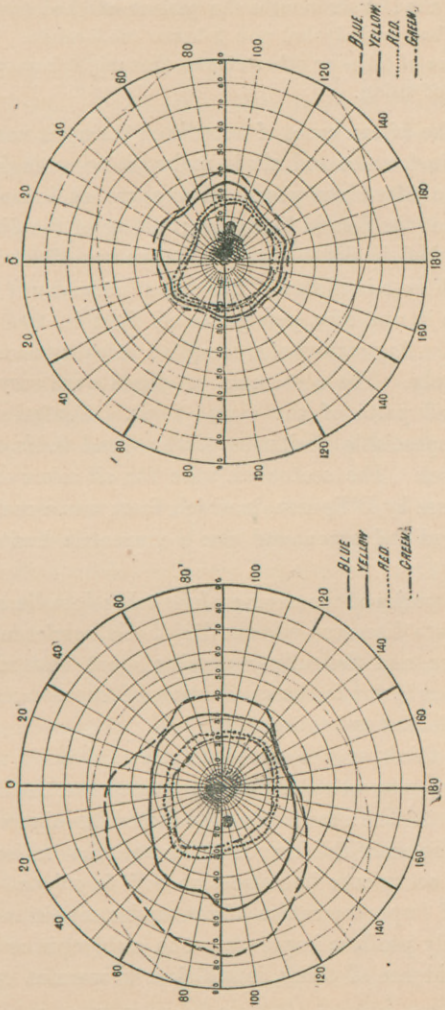


Fig. 6.—W. S., April 18, 1891. Right eye. Left eye.

cided improvement as regards the central scotoma, and there is a marked improvement in vision in the left eye.

During the last six months the patient has had tonic treatment, and has used alcohol and tobacco moderately. There is no symptom of tabes or other disease that might have produced the defect of vision.

* Of the fifteen cases of neuritis of the optic nerve, nine occurred in females and six in males, at ages ranging from eighteen to fifty-eight years. There was an inflammatory condition at the disc in four cases; paling of the disc, more or less marked, in eleven cases. One eye was affected in four cases, both eyes in eleven. Blindness (permanent) resulted in one eye in one case, perception of light in two eyes in two cases. Approximately, complete recovery occurred in one case only. The scotomata produced were very varied, affecting all parts of the visual fields. Central scotoma without appreciable limitation of the visual fields occurred in two cases. The scotomata were for *all colors* except in the first case by D'Eperon, in which there was a central scotoma for red and green, and also a concentric limitation of the fields.

The histories of the cases exclude tabes dorsalis, syphilis, and the acute diseases—such as diphtheria, scarlet fever, etc. —as causes, and the only remaining agent that might be argued as a factor in the production of these cases is the abuse of alcohol and tobacco.

This, I think, may be excluded for the following reasons: 1. The large proportion of females affected and the histories recorded. 2. The character of the scotomata observed. 3. The suddenness of the loss of vision and the uniform history of its occurrence in connection with *la grippe*. 4. The absence of improvement in vision under conditions which so uniformly produce improvement in amblyopia *ex abusu*.

The evidence, I think, is sufficient to warrant our put-

* Added since the paper was read at the N. Y. Academy of Medicine—to next paragraph.

ting *la grippe* in the category of the causes of retro-bulbar neuritis.

Neuritis in other parts of the body from this cause is not unknown. Bidon (20) mentions cases of paralysis of the pneumogastric from the bulb to its terminals followed by palpitation and heart spasm and death in one case from congestion of the lungs. He cites a case by Féréal and one by Laveran of paraplegia with rapid ascending paralysis and death. Also a case by Bennett in which paralysis of the bladder was the first symptom. Death by ascending paralysis followed. Bidon also cites cases of neuritis of the trigeminus and sciatic. Villard and Erlenmeyer report cases of chorea and epilepsy in which *la grippe* was apparently the exciting agent.

From what has preceded we may draw the following conclusions:

1. Neuritis of the optic nerve due to *la grippe* is of relatively rare occurrence; it may affect one or both eyes and may produce partial transient impairment of vision, partial permanent impairment of vision, or absolute permanent blindness.

2. Failure of vision begins from three to fourteen days after the commencement of the attack of *la grippe* and proceeds quite rapidly. It is always preceded by intense frontal or circumorbital cephalalgia.

3. The form of scotoma produced is probably dependent on the position of the neuritis in the course of the nerve from the globe to the chiasm. If immediately behind the globe, the macular fibers are affected; if near the optic foramen, the peripheral fibers suffer first.

4. Treatment has but little effect to promote a cure. If recovery follows, it takes place spontaneously and accompanies improvement in the patient's general condition.

5. The neurites of motor nerve branches resemble those

that occur after diphtheria and are mostly of a transient character. They may occur in any or all of the nerve trunks pertaining to the eye.

References.

1. Badel. *Arch. d'ophthal.*, 1890, p. 146.
2. Galezowsky. Reported by Gazis. *Rec. d'ophth.*, 1890, p. 586.
3. Guttmann. *Berl. klin. Woch.*, 1890, p. 1111.
4. Hosch. *Correspondenzbl. f. schweiz. Aerzte*, 1890, p. 163.
5. Laqueur. *Klin. Monatsbl. f. Augenheilk.*, 1890, p. 195.
6. Adler. *Wien. med. Woch.*, 1890, p. 140.
7. Eversbusch. *Münchener med. Woch.*, 1890, Nos. 6, 7.
8. Fuchs. *Wien. klin. Woch.*, 1890.
9. Bergmeister. *Wien. klin. Woch.*, 1890, p. 11.
10. Scharpringer. *Med. Record*, 1890, p. 679.
11. Klebs. *Deutsch. med. Woch.*, 1890, No. 14.
12. Weichselbaum. *Wien. klin. Woch.*, 1890, p. 104.
13. Babés. *Wien. klin. Woch.*, 1890, p. 177.
14. Gazis. *Rec. d'ophthal.*, Paris, 1890, p. 586.
15. D'Eperon. *Progrès méd.*, Paris, 1890, p. 471.
16. Gorecki. *Rec. d'ophth.*, 1891, p. 46.
17. Graeff. *Berl. klin. Woch.*, 1890, p. 604.
18. Vignes. *Rec. d'ophthal.*, 1890, p. 402.
19. Hansen. *Med. Record*, November 8, 1890.
20. Bidon. *Rev. de méd.*, Paris, 1890, p. 661.

46 East Thirty-first Street.

REASONS WHY

Physicians should Subscribe

— FOR —

The New York Medical Journal,

EDITED BY FRANK P. FOSTER, M.D.,

Published by D. APPLETON & CO., 1, 3, & 5 Bond St.

1. **BECAUSE:** It is the *LEADING JOURNAL* of America, and contains more reading-matter than any other journal of its class.
2. **BECAUSE:** It is the exponent of the most advanced scientific medical thought.
3. **BECAUSE:** Its contributors are among the most learned medical men of this country.
4. **BECAUSE:** Its "Original Articles" are the results of scientific observation and research, and are of infinite practical value to the general practitioner.
5. **BECAUSE:** The "Reports on the Progress of Medicine," which are published from time to time, contain the most recent discoveries in the various departments of medicine, and are written by practitioners especially qualified for the purpose.
6. **BECAUSE:** The column devoted in each number to "Therapeutical Notes" contains a *résumé* of the practical application of the most recent therapeutic novelties.
7. **BECAUSE:** The Society Proceedings, of which each number contains one or more, are reports of the practical experience of prominent physicians who thus give to the profession the results of certain modes of treatment in given cases.
8. **BECAUSE:** The Editorial Columns are controlled only by the desire to promote the welfare, honor, and advancement of the science of medicine, as viewed from a standpoint looking to the best interests of the profession.
9. **BECAUSE:** Nothing is admitted to its columns that has not some bearing on medicine, or is not possessed of some practical value.
10. **BECAUSE:** It is published solely in the interests of medicine, and for the upholding of the elevated position occupied by the profession of America.

Subscription Price, $5.00 per Annum. Volumes begin in January and July.