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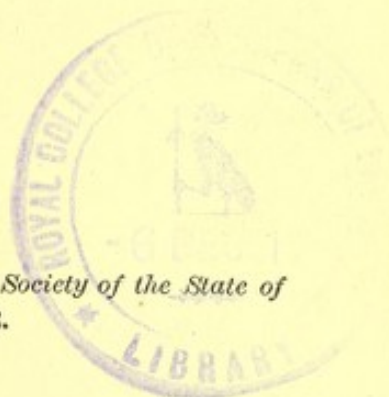
AMBLYOPIA POTATORUM.

BY

ED. M. CURTIS, M. D.

• SACRAMENTO, CALIFORNIA.

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AMBLYOPIA POTATORUM.

By ED. M. CURTIS, M. D., OF SACRAMENTO.

Having been called upon to treat quite a number of cases of amblyopia potatorum, or alcoholic amaurosis, during my short residence on this coast, I have become convinced that such cases must frequently fall under the notice of general practitioners; and although their history does not show any miraculous recoveries brought about by skillful surgical operations, yet I have thought that their detail might be of quite as much practical and general benefit as that of cases which require delicate special manipulation, and come more exclusively under the domain of the ophthalmic surgeon.

The advent of the ophthalmoscope destroyed that general application of the terms "amaurosis" and "amblyopia" to all post-lenticular troubles where the appearance of the eye was natural, and restricted them to those cases where the cause of loss of sight could not be found within the eye itself; and it gave the lie to that old facetious definition, that amaurosis was that disease in which neither the patient nor his physician could see anything; for sooner or later in the course of these affections, the ophthalmoscope does detect pathognomonic intra-ocular changes.

That such losses of sight were frequent among the intemperate, was observed long before these affections were properly classified and distinguished from intra-ocular diseases; but until quite recently, it has been uncertain whether they were dependent on any direct toxical effect of the alcohol, or upon secondary changes brought about by that degeneration of the cerebro-spinal axis, so well known as one of the frequent concomitants of chronic alcoholic toxæmia. But now, although the

latter is sometimes known to be the cause, it is conceded by many able writers (Wilson, Allbutt, and others), that the poison often acts directly upon the optic nerve, without having caused any appreciable primary lesion of the brain, probably by interference through the sympathetic with the intra-ocular circulation of the blood.

The dimness of sight usually comes on suddenly. Patients complain that objects appear misty, or as if seen through a veil, and that they are not distinct even when very near. The sight is clearer and stronger when an object is first observed than after looking at it for a few seconds; it is poorest at midday, and best at twilight, or by artificial light; objects often appear to move or waver; persons' faces are described as having a blue or yellow cast. Even at the commencement of the attack, the patient is frequently found to have no more than one tenth of normal sight when measured by test type. The eyes appear natural; the pupils of normal size, or even smaller. The field of vision is not at first contracted. The ophthalmoscope may show the fundus oculi at the beginning of the trouble to all appearances normal, but usually the optic papillæ and retinæ are found to be hyperæmic, and if the disease goes on there is soon an appearance of proliferative action, and atrophy supervenes; the discs changing to a bluish gray and finally becoming white. Many of these symptoms may be found in cases of amblyopia from other causes than alcoholic poisoning. Mr. Carter⁽¹⁾ thinks the symptoms of tobacco amaurosis, as described by Wardsworth, identical with those of amblyopia potatorum. Hirschler,⁽²⁾ that the symptoms of loss of sight from either cause are much the same. And Wells⁽³⁾ said, in a recent lecture, that alcoholic and tobacco amaurosis do not differ sufficiently from other forms of the same disease to make a class by themselves. Be this as it may, one thing is certain, that alcohol does cause amblyopia, and the history of each case of this character, and often the appearance of the patient, will sufficiently indicate that cause. These cases also differ from many amblyopic affections, in so far as this—that having a known cause, if it be

(1.) Carter's translation of Zander on the Ophthalmoscope, p. 132.

(2.) Archive für Ophthal., xvii, 1, 221.

(3.) London Lancet, Dec., 1871.

removed, there is a much greater prospect of recovery than in ordinary cases of amblyopia.

In the treatment entire abstinence from alcoholic stimulants must be insisted upon; excesses of all kinds must be avoided; the habits should be perfectly regular in regard to diet, sleep, and exercise; and everything that will promote the general health should receive attention. But it is much easier to advise than to enforce such a regimen, as the majority of the patients who are afflicted with amblyopia potatorum are of that class who so dislike any constraint placed upon their appetites, that they would often rather run the risk of blindness than change their long formed and unnatural habits. It has been usual to try the effect of alteratives in these cases, and they have often proved in some degree beneficial. Local blood-letting appears sometimes to be of use, and the direct galvanic current has also seemed to do good. The success gained by Professor Nagel in cases of affections of the optic nerve, by the hypodermic use of strychnia, induced me to try that remedy in several of the following cases with quite beneficial results. Its effect, when administered in this manner, is evidently different from when given *per oram*, as shown by its exciting the optic nerve previous to causing any irritation of the motor nerves.

CASE 1.

Alcoholic amaurosis—white atrophy of both optic papillæ.—While on a visit at Sacramento in March, 1871, by request of Dr. Cluness, I examined Chas. H—, aged thirty-eight years, proprietor of a drinking saloon. He had lived fast, been up late of nights, drank hard but not to intoxication, and smoked moderately. Three years before, he noticed his sight was dim, and since then it has gradually failed; but for a long time he found he could see better when his saloon was brilliantly lighted for the night than during the day. He has never had any serious illness, nor been subject to headache. His eyes appeared natural, with the exception that the pupils were small. When placed in the dark they did not expand; but by concentrating a strong light upon them with a convex lens, they contracted to about one half their usual size. He had with his right eye a mere perception

of light, and with the left could with difficulty make out No. C of Green's test type at twelve inches distance.⁽¹⁾ As the pupils were so small, I applied atropine before using the ophthalmoscope, but no dilatation was produced. Both optic papillæ were white and atrophied; the arteries and veins both small, and hardly to be distinguished from each other. Advised abstinence from liquor and tobacco, regularity of habits, and the use of hydrargyri bichloridum in small doses.

October 9th, 1871, he called on me, stating that for a time after commencing the above treatment his sight seemed to improve, but one morning he awoke and found himself so nearly blind that he has since been obliged to be led about. He was totally blind in the right eye, and with the left he could not count fingers when held between him and the light. There had been no appreciable change in the fundus of either eye. Remembering my poor success in dilating his pupils six months before, I tried a solution of sulph. atropiæ gr. viij to the 3, for several days in succession, but it caused no dilatation, although he complained of much dryness of the fauces. Gave him an injection of strychn. acetat gr. $\frac{1}{30}$, in the left arm, and he almost immediately noticed flashes of light before the left eye.

October 10th, the above treatment was repeated with a similar result; said that it looked lighter than usual when he awoke in the morning.

October 15th.—He has each day received the above dose, sometimes in the arm, at others in the temple; he frequently speaks of flashes of light before the left eye but none before the right; he can with difficulty count fingers at twelve inches with the left eye; no perception of light with the right. Gave strychn. gr. $\frac{1}{20}$, in right temple.

October 28th.—Since the above date the dose has daily been

(1.) The test type of Dr. Green, used in this and the following cases, are a modification of those of Snellen, in which the No. of the letters corresponds to the number of feet at which they should be read by the emmetropic eye; for instance, No. XX should be read at twenty feet; No. XL at forty feet; No. C at one hundred feet, etc.; but if a patient can only read No. C at twenty feet, he only has one fifth of normal vision, while if he reads No. XL at twenty feet, he has one half vision. Used in this manner, these type are an accurate measure of the amount of vision possessed by the patient whose case may be under consideration.

increased until the last three days he has received gr. $\frac{1}{10}$. He speaks of occasional twitching of the muscles during the last twenty-four hours; he can now make out No. CC at twelve inches with left eye; no sight in right; treatment to be discontinued for the present.

May 1st, 1872.—During the past six months he has taken the injection several times for a few days at a time, and although it continued to stimulate the left nerve, as shown by the phosphenes, I have been unable to perceive that it has caused any further improvement in sight. The appearance of the fundus oculi has not changed.

October 1st.—He has received no treatment during the past Summer. The left optic papilla is unchanged; the right has become more densely white and atrophied; the vessels are mere threads; he still retains the same amount of sight.

CASE 2.

Alcoholic amblyopia—no hyperæmia of optic papillæ or retinæ.—December 30th, 1871, Charles W——, aged thirty-nine, a wood turner, found on waking in the morning some two weeks since that his sight was blurred; nothing looked natural, objects were unsteady; he could not read, and surrounding objects appeared so strange that it took away his appetite and made him nervous. Since then he thinks his sight has remained the same. He came to this coast at an early date, and has worked and drank hard ever since; he also smokes to excess; appeared in good health, but complained of an occasional heavy feeling in the lumbar region; the urine contained a trace of albumen, but neither Dr. Hatch (who saw the case with me) nor myself could on microscopic examination find casts or any further evidence of nephritic disease. His visual field was not contracted, and he could read No. C at twenty feet with either eye; the pupils were small and responded very slowly to the stimulus of light; the fundus of each eye appeared perfectly normal; but bearing in mind the theory that the amblyopia in such cases is caused by congestion of the choroidal vessels, I tried the effect of local blood-letting; ordered three leeches to each temple, with direc-

tions to permit the bites to bleed freely, and that he should be confined to a dark room for forty-eight hours—till after the reaction from the leeching had passed away. He was also to give up drinking and smoking, was given proper hygienic and dietetic rules, and a tonic of calisaya and iron.

January 2d, 1872.—Says he feels much better; that his sight has improved. He can read all but P and C of No. LXXX, at twenty feet. Gave him gr. $\frac{1}{30}$ strychn. in left temple; he noticed phosphenes, and half an hour later could see the letters that were before indistinct. There was no show of albumen in his urine.

January 3d.—Injection repeated. No time to examine sight.

January 4th.—Same dose repeated. Can read No. LXIV at twenty feet with either eye.

January 7th.—Has had the dose gradually increased each day, until now he gets gr. $\frac{1}{15}$; can read No. XL at twenty feet easily with the right eye, and with some difficulty can make out the same with the left.

January 13th.—Since the last date he has taken an injection of gr. $\frac{1}{15}$ every other day. He often speaks of flashes of light, but has not noticed any stiffness or twitching of the muscles. He can read No. XX at twenty feet with either eye. The ophthalmoscope still fails to detect any abnormal appearance, and the urine is quite natural. Now that he has fully regained his sight he tells me that he did not follow my directions in regard to the use of tobacco, but has continued to smoke several times daily during the whole treatment.

July 10th.—During the last six months he has received no medical treatment—has been hard at work—has drunk nothing, but has continued to smoke. He can still read No. XX at twenty feet, and says his sight is as good as ever.

CASE 3.

Amblyopia potatorum—congestion of both optic papillæ—probable atrophy of optic nerves.—January 2d, 1872, John S—, aged thirty-five, barkeeper, noticed about a month since that his right eye was blurred. From that time the sight has gradually failed, and

for the last ten days his left eye has been growing dim. He has drank more or less whisky for many years, and for two years past has drank from ten to twenty times a day. Says he was never intoxicated, that his general health is as good as usual, only he does not sleep well; he has a pale, anæmic look, and an anxious, nervous expression. Neither visual field is contracted. With the right eye he can make out No. CC at twenty feet with difficulty; with the left, he reads No. C easily. The pupils are small and sluggish. The ophthalmoscope shows the right optic papilla congested and swollen, the swelling extending into the retina, so that the outline of the disc cannot be made out; the vessels seem much distended, and there are several small hemorrhagic spots along the course of the veins. The left papilla is not so much congested; its outline can still be seen; the vessels are large, but there have been no hemorrhages.

As I made it a condition of my treating him that he should give up his business as well as stop drinking, he asked time for consideration, and I saw no more of him, till a few days since I met him on the street led by a small boy, and an acquaintance told me he had but a mere perception of light. I have no doubt that atrophy of the optic nerves has supervened, on the conditions present at the time of my examination, nine months ago.

CASE 4.

Amblyopia potatorum—congestion of both optic papillæ.—March 26th, 1872, Michael L—, aged forty-eight years, proprietor of a drinking saloon, was sent to me by Dr. Tyrrell. He has been in the habit of drinking hard during the last sixteen years, but never to intoxication; has drank all kinds of liquors, often taking twenty drinks a day; he also smokes to excess. Eleven days ago he noticed his sight was dim, and since then it has slowly failed; says he is almost blind, and can recognize no one during the middle of the day, but sees pretty well after the gas is lighted; when he walks, the floor looks as though it was coming up to meet him, and he lifts his feet in walking as though he was going up hill. His health is good, appetite and digestion good, sleeps well, and there is no appearance of any disorder of the general nervous system. His pupils

are of medium size but sluggish; the visual field of each eye is normal in extent; and he sees with either equally well, making out with difficulty No. C at twenty feet. The optic discs are congested and swollen; their outline cannot be distinguished; the arteries and veins are both enlarged, and there is a small hemorrhagic spot half way between the papilla and macula lutea of the left eye. Directed him to stop drinking and smoking; to leave his business, and take out of door exercise; to be regular in all his habits, and to take a solution of iodide and bromide of potash—gr. x , of the former, and x of the latter, *ter in die*.

May 20th.—Since the last date he has followed the above instructions quite closely, with the exception that he has attended to his business a part of each day, and has not entirely left off smoking. He thinks his sight has improved, and on testing I find he can read No. LXXX at twenty feet with either eye. The congestion and swelling have nearly disappeared from both papillæ, and there is but a mere trace of the hemorrhagic spot in the left eye. Gave him an injection of strychn. gr. $\frac{1}{30}$.

May 24th.—During the last four days he has received the above dose each evening, but it has caused no phosphenes, nor any perceptible drug effect; yet he can read No. LXIV at twenty feet, showing a gain in the four days of from one quarter to nearly one third of normal vision. Increased the dose to gr. $\frac{1}{20}$.

May 31st.—The dose has been daily increased until now he receives gr. $\frac{1}{15}$, and can read with either eye No. XL at twenty feet.

June 22d.—During this month he has been irregular in his visits, and has not received treatment oftener than once in four days. I now give him gr. $\frac{1}{10}$ at a time, but no phenomena have followed it, with the exception that he thinks he has twice noticed flashes of light. He can now read ordinary newspaper type and make out No. XXXII at twenty feet.

September 30th.—During the past three months he has received no treatment; has been at work out of doors, has drunk nothing, smoked three times a day, and kept regular hours. His sight remains the same as at last date—that is about two thirds of normal vision. The ophthalmoscope shows the inner part of each optic papillæ whiter than natural, while the outer part

seems highly hyperæmic. There is a deposit of pigment at the seat of the former hemorrhage, and he says there is always a black spot before that eye.

CASE 5.

Amblyopia potatorum—congestion of both optic papillæ.—April 5th, 1872, John M—, aged forty-eight, liquor dealer, was sent to me by Dr. Brusie. Noticed his sight was failing him about four weeks previous, at which time he was suffering from general nervous prostration brought on by long intemperance in drinking, and great irregularity in eating and sleeping; had smoked much, and been accustomed to drink from fifteen to thirty times a day. The doctor had been giving him alteratives, and had stopped his liquor and tobacco. His nervous system still seemed in an irritable condition; his urine is loaded with phosphates, and he has some cough with frothy bronchial expectoration, but his appetite is good and he sleeps well. His subjective symptoms of loss of sight are much the same as those of the two previous cases. His field of vision was not contracted; with the right eye he could at first read No. LXIV at twenty feet, but on looking for a few moments he could only make out No. C. With the left eye he could only read No. CC. This eye is hypermetropic one twenty-fourth, and he tells me he never saw as well with it as with the right. There was little difference in the ophthalmoscopic appearance of the two eyes; both papillæ were hyperæmic, slightly swollen, and the arteries and veins enlarged, the latter tortuous. I recommended a solution of iodide and bromide of potash; that he should observe the utmost regularity in all his habits of eating, sleeping, and exercise, and, of course, continue his abstinence from alcohol and tobacco.

June 25th.—During the last three months he has been uneasy about his general health, and has consulted many physicians; for the most of the time he has been under an alterative course of treatment. His sight has slowly improved, and his health seems tolerably good. With the right eye he reads No. XL at twenty feet; with the left, No. C. The ophthalmoscope shows the fundus of the right eye quite normal, but the inner part of the left papilla seems too white. I advised the hypodermic use

of strychnia, but the name of the drug seemed to frighten him, and he concluded he had no time to attend to it.

October 4th.—I heard from Mr. M—— to-day, that his health was restored, and his sight nearly as good as ever. He has continued his abstinence from liquors, but has been unable to give up smoking.

CASE 6.

Alcoholic amblyopia—hyperæmia of optic papillæ.—May 11th, 1872, Mr. A——, lawyer, sent to me by Dr. Wilkins; six weeks since noticed sight was getting dim; tried different kinds of spectacles, but they were of no use. Since then they have gradually failed, and now he cannot see to do business; he is unable to recognize acquaintances unless very close to them, and notices that their faces have a blue look; he is uncertain about the position of objects, and sometimes they appear to dance before him; he seems to be looking through a thick haze, which partially clears up after sundown. For the past two years he has smoked much, drank freely, and been irregular in all his habits. General health is good, with the exception that he complains of "nervous tremors," and that he does not sleep well; he also has an anxious expression. His visual field is not contracted; with each eye he can barely discern No. CLX at twenty feet. The pupils are small and sluggish; the ophthalmoscope shows both optic papillæ hyperæmic; the outline of the left could not be made out, but on the temporal side of the right it could barely be discerned; both arteries and veins appeared large, the latter tortuous. I insisted on his abstaining entirely from alcohol and tobacco, on perfect regularity in all his habits, and advised horseback exercise. He is to take gr. v of iodide and gr. x of bromide of potash, three times a day.

June 17th.—He has followed all my directions, with the exception of smoking, but has felt unable to give that up. He appears in perfect health, and says he never felt better in his life, and that his sight has improved so that he can read coarse print. He can now make out No. LXXX with either eye at twenty feet, and the optic papillæ appear quite normal. Strych. acetat gr. $\frac{1}{30}$, was injected into the temple morning and evening.

June 18th.—Says he sees plainer; but on testing, his vision is still one fourth, as yesterday; injection repeated.

June 19th.—Can make out No. LXIV at twenty feet; has experienced no effect from the strychnia, so increased the dose to gr. $\frac{1}{20}$, morning and evening.

June 20th.—Repeated the above dose to-day, and, after taking it this evening, he for the first time noticed flashes of light before each eye, and soon after could read No. L at twenty feet.

June 24th.—Has been out of town and without treatment for the last four days. Gave him gr. $\frac{1}{20}$, morning and evening. He reads No. XL at twenty feet.

June 30th.—The injections have been continued twice daily in gradually increased doses, till for the last few days he has received gr. $\frac{1}{15}$ at a dose, and this evening, for the first time, complains of a feeling of stiffness about the muscles of the jaw and neck, and an uneasy nervous sensation. Treatment to be discontinued for the present. He can read No. XXV at twenty feet.

October 5th.—I have just received a letter from Mr. A., in which he states that he can read the finest print without difficulty, but that he has some trouble in seeing distant objects plainly, and that if he reads a long time his eyes get tired. This may be owing to a small amount of hypermetropia (about $\frac{1}{4}$) that he has in each eye, which was probably latent previous to his trouble, and which can easily be corrected by proper glasses.

These cases have been given so much in detail that very little comment seems necessary. The first shows the power of strychnia used hypodermically even in those cases which might be considered beyond all help, as the patient only had a mere perception of light, and the optic papillæ were very much atrophied, yet he regained sufficient sight to be able to distinguish large objects when near his eyes—a priceless boon to one so near totally blind.

The second case had only one fifth of normal vision at the commencement of treatment, and was restored to perfect sight by nine injections of strychnia.

The third, ending in loss of all useful sight, is only introduced

among the others to show the danger of a continuance of the use of alcohol by this class of patients.

The fourth did not follow directions very closely, yet starting with only one fifth of normal vision, his sight continued to improve till it reached two thirds.

The fifth case only received alterative treatment, which was kept up for about three months; he gaining in this time double the amount of sight he had at commencing.

Case sixth, starting with one eighth vision, gained by treatment, to four fifths, which improvement—as well as that of the previous cases—has been retained, or even gained upon, up to the present date.

All of these cases were tested for color blindness, but the results were so unimportant that I have not noticed them in detail. Case first, of course, had no perception of colors. The perceptions of the second and sixth were normal. Case fifth, with the left eye, could not distinguish between the different shades of red, and called yellow white; his right eye was normal. The third and fourth cases gave such irrelevant and contradictory answers that no reliance could be placed upon them.

The preparation of strychnia used in the above cases was the acetate gr. j to fl. ʒ v of distilled water, and the improvement under its use was much more rapid than while alteratives were given. I did not inject the strychnia in any case while there was much hyperæmia of the optic papillæ, preferring to depend upon alteratives until the congestive appearance had somewhat passed away; yet this may have been an unnecessary precaution, as every engorged papilla is not the result of an over supply of blood to the fundus oculi. Although I have had no unpleasant results from the use of strychnia in this form, and have given it repeatedly in the large dose of gr. $\frac{1}{16}$, yet I think it quite necessary to use the utmost caution in its administration; beginning with a small dose, not greater than gr. $\frac{1}{32}$, and bearing in mind that the drug is said to have an accumulative action, it may be gradually increased until it has commenced to produce its toxical effect, then the interval between the injections should be lengthened, and the effect of every dose carefully watched; or, what is still safer, the treatment discontinued for a time.

It might be urged that the cause of the amblyopia, in the cases above recorded, was as much the abuse of tobacco as of alcohol, as nearly all were great smokers; but the four who made good recoveries all continued to smoke, and all gave up the use of alcoholic drinks, so that it would seem that tobacco had nothing to do with their blindness. While not disputing that tobacco may cause amblyopic affections, I still think alcohol is a much more frequent and potent cause. Indeed, in the carefully tabulated cases of tobacco amaurosis, published about a year since in the Royal London Ophthalmic Hospital Reports, by Mr. Hutchinson, we find that nearly all of them had used alcoholic beverages, and quite a number had drunk to excess, so that one may be excused for thinking that alcohol might at least have been a factor in the cause of their blindness.

MANSION HOUSE, SACRAMENTO, October 8th, 1872.

