STATISTICAL DETAILS
OF
THREE YEARS' EXPERIENCE IN RESPECT
TO THE
FORM OF AMAUROSIS
SUPPOSED TO BE
DUE TO TOBACCO.

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It is no part of my object in the present paper to enter into details as to the ophthalmoscopic appearances which characterise the disease known as "white atrophy of the optic nerves." Amongst ophthalmic surgeons these are well recognised and for the most part are easily distinguished from those of other diseases. In order to make the subject more intelligible to those not conversant with the ophthalmoscope, I may, however, be permitted to say a few words regarding them. The cases which form the subject of this paper are recognised by the loss of vascular supply to the optic nerve itself. There is not usually much diminution in the size of the vessels

which supply the retina, and often these remain of good size when the nerve itself is as white as paper. The first stage (one which is usually very transitory and perhaps often altogether omitted) is one of congestion, during which the disc looks too red. Then follows pallor of the outer half of the nerve disc, that part which is nearest to the yellow spot. During these stages the patient complains of dimness of vision merely. Everything seems in a fog to him, but he has no pain in the eyes nor any photophobia or photopsiæ. In a later stage the whole of the optic disc has become pale even to a blue-milk whiteness, and later still there is proof, not only of anæmia of the nerve, but of advanced atrophy. The stages usually occupy from four months to a year. In many cases the patient becomes at length absolutely blind, but in others the disease having advanced to a certain point is arrested. There is from first to last no evidence of disease of any structure in the eyeball excepting the optic nerve, and even after years of absolute blindness, the retina, choroid, &c., remain healthy and their blood-supply good. Almost always both eyes are affected and progress almost *pari passu*. Sleepiness, a little giddiness, and a little headache are usually the only constitutional symptoms which attend it, and these disappear at a later stage and the patient regains his usual health. As there is no tendency to fatal complications, opportunities for post-mortem examination of the brain are scarcely ever obtained.

White atrophy of the optic nerve is observed in another class of cases which are quite distinct from those which are the subject of this paper, but which under certain conditions are distinguished from them with difficulty. I allude to those in which the atrophy is secondary to acute inflammation of the nerve-structure. During the stage of inflammation these cases are easy enough of diagnosis, the evidence of lymph on the disc being positive and readily appreciated. At a later period, however, when the lymph has been absorbed, the appearance of atrophy may closely simulate that presented by the cases in which atrophy is the primary change.

There are still some points of difference in the state of

the disc which will help the trained observer, and the history of the early symptoms is usually very different. In optic neuritis we usually have severe headache, repeated attacks of sickness, implication of other cerebral nerves, or even epilepsy or hemiplegia. The cases of primary atrophy are on the contrary characterised by the absence of all other serious symptoms.

In submitting any question to the test of numerical inquiry, everything depends on the accuracy of the materials collected. In the present instance the chief risk of fallacy concerns cases of atrophy after neuritis. If these cases should, in error, be counted with those of primary atrophy, very different statistical conclusions would be arrived at from those which I have obtained. Neuritis is common in children and women, whereas primary atrophy is, I believe, almost unknown in children, and very rare in the female sex.

With an apology for these introductory statements I will now proceed to the subject-matter of my paper.

Three years ago I collected all the cases of uncomplicated cerebral amaurosis of which I had the notes, with the object of determining, as far as such statistics could help me, the supposed influence of tobacco in the production of this disease. The most remarkable fact which my cases showed was the infrequency of the disease in women. Excluding all cases in which the amaurosis was clearly secondary to optic neuritis, those in which there was disease in the eyeball itself, and those in which only one eye was affected, I had to deal with a total of forty cases. In all in this group the disease was symmetrical, of gradual progress, without any other marked symptoms of cerebral disease, and tending slowly to the extinction of sight with white atrophy of the optic nerves. Of these, thirty-seven were in men and three in women. All the patients which I here include were adults, and almost all the men had been smokers. This fact as to the very different proportions in the two sexes impressed me strongly as of great value as a possible clue to the cause of this obscure malady, and I ventured to discuss at some length those differences in the habits and conditions of the two sexes

which might be supposed to have possibly acted as such. This inquiry did not, however, yield much result, or rather its results were negative. In a large majority of my patients it was not possible to assign any definite sexual cause for the disease. In but few was there any reason to suspect excessive sexual indulgence, the existence of spermatorrhœa, or the injurious use of stimulants. The occupations of my patients had been extremely varied, so much so as to entirely baffle conjecture in this direction.

This former report was compiled under several disadvantages. In some of the cases the diagnosis had not been made as accurate as could have been wished, and, as many had been under care before I was aware of the importance of the tobacco question, I had omitted inquiries on this head.

During the three years which have since passed I have continued, with the able assistance of my friend Mr. Waren Tay, to carefully record all facts bearing upon the subject which came under my notice. To these I now invite the attention of the Society. In the appended tables will be found a brief statement of the leading facts as to all the cases of symmetrical amaurosis without neuritis which have been under my care between January 1864 and December 1866. I have excluded all cases in which any evidence of inflammation of the retina, choroid, or optic nerve was to be found, and also all cases in which but one eye was affected. These latter belong clearly to a different class.

My present report comprises thirty-seven cases. In all, the patients were adults, and at ages varying from 21 to 56, and averaging 40. Almost all the patients were in good health, and in but few had there occurred at any stage any symptoms of cerebral disorder apart from the amaurosis. None of them were paralysed in any way, and none of them presented any material defect in hearing. In most there was the history of some frontal headache, slight giddiness, &c., at the time the first defect of sight was noticed, but in none had these symptoms been severe, and in almost all they had ceased as the amaurosis advanced. Of the thirty-seven cases, thirty-four occurred in men and three in women; thus remarkably

confirming the conclusion on this point arrived at in my former paper. Here I may perhaps be allowed to state that I have been scrupulously careful to include all cases occurring in women which could be fairly considered of the same class as those in men. Most of my cases have been observed in public, many of them have been made the subjects of clinical demonstration at our evening lectures at Moorfields, and I have taken every opportunity of directing attention to the exceptional cases in which females were the patients.

I have arranged the cases in two tables, one of females the other of males, and will append a few comments on each.

Most of the abbreviations used in the table will, I trust, be found intelligible. It is, however, necessary to explain that whenever the statement "vessels of good size," or the like, occur, only the branches of arteria or vena centralis are referred to.

TABLE I (*Females*).—*Cerebral amaurosis in women (three cases)*.

Number, reference, and date.	Name, occupation, state of health, &c.	Age, duration of amaurosis.	Use of tobacco, alcohol, &c.	State of eyes.	Other symptoms.	Progress and remarks.
1 March, 1865	Eliza N—, married 11 years, good health, menstruation regular	29 ; 4 months	Temperate. No cause assignable	Could only read letters of No. 19. Discs pale	Gradual failure. Bad headaches, muscæ and photopsiæ occasionally, often giddy	This case very closely resembles the cases we meet with in men. She attended six months, and got slowly worse until she could only count fingers.
2	Mary Anne H—, a widow 16 years, a laundress, menstruation ceased five years, thin and rather feeble	52 ; 2 years	Had used snuff but denied that she had smoked. No cause assignable	Quite blind. Discs blue white. Central vessels of fair size	Gradual failure during two years; a little headache, but no material head symptoms	A very close parallel to what we meet with in men.
3	Mrs. C—, looking healthy	27 ; 3 months	Had suffered severely from constitutional syphilis seven years before the amaurosis began. No use of tobacco or abuse of alcohol	Could only read 70 at 1'. Discs almost normal, a little paler than natural. Pupils of medium size, and fairly active	Had suffered for six months from head-aches. For three months her sight had been failing. No sickness or other symptoms	I think there can be but little doubt that this is a case of syphilitic neuritis in which the lowest parts of the nerves are not as yet involved.

Two of the cases in which women were the subjects, Nos. 1 and 2, present close parallels to what we meet with in men. In one, the patient was a married woman of 29, in the other a widow of 52. In neither could any special cause be assigned. Both denied having ever smoked, but one of them, the older one, had for years been accustomed to use snuff. In one, the patient came under care when quite blind, with the nerves in a state of advanced atrophy, in the other, I had the woman under care for a year, the disease steadily advancing in spite of treatment. In the third case the patient was undoubtedly the subject of constitutional syphilis and it may be suspected that the failure of sight was in connection with that cause. When she was under observation, six months from the commencement of her symptoms, her discs showed but little deviation from the normal state although she had already so far lost her sight as to be only able to read the largest capitals, (Sneller, 70 at 1'). Under treatment, by iodide of potassium, some improvement is, I think, in progress. This case is especially important as illustrating one of the possible causes of cerebral amaurosis without neuritis, or rather without proof of neuritis on the optic disc.

TABLE II (Males).—*Cerebral amaurosis in men (Thirty-four Cases).*

A statement of the details of thirty-four cases in which men became the subjects of uncomplicated amaurosis from white atrophy, being all that came under my care during a period of three years (January, 1864, to December 31st, 1866).

Number, reference, and date.	Name, occupation, and state of health.	Age, and duration of amaurosis.	Use of tobacco and alcohol.	State of eyes.	Other symptoms.	Progress and remarks.
1; Nov. 5, 1866; C. 111	John J—, shoe-maker, married; in good health	37; 5 months	Half an ounce of shag daily. Very temperate in the use of stimulants	200 (Sn.) at 20'. Discs very white. Central vessels much diminished	In good health all the time.	
2; Nov. 1, 1866; C. 95	James E—, a sawyer, married; florid, but nervous	46; 3 months	Half an ounce daily for twenty-seven years. A spirit drinker	Pupils sluggish, of normal size. Reads 18 (J.). Outer parts of discs grey. Retinal veins turbid	A florid, robust man; tremulous and nervous from drink—lieve they had nothing to do with the amaurosis.	There were curious crescents in each eye, but I believe they had nothing to do with the amaurosis.
3; Oct. 29, 1866; C. 92	George H—, short, spare; healthy	41; 2 months	A quarter of an ounce daily. Temperate in stimulants	Pupils normal. Just spells out 16 (J.). Discs scarcely paler than natural	No other symptoms.	
4; Oct. 15, 1866; C. 82	William Y—, a labourer; healthy	47; 2½ years	Half an ounce a day for twenty years. Temperate as regards stimulants	Pupils rather larger than natural, and almost motionless. Discs grey. Central vessels somewhat diminished. Quite blind	Had some pain in temples when the symptoms began. In nine weeks was quite blind	He left off smoking six months after the amaurosis began; he thought it had made him nervous. This man fancies that after two years' blindness he is now beginning to see shadows.

5; Aug. 20, 1866; C. 65	Benjamin P—, stunted growth, pale complexion, aspect of defective virility	20; 5 years	Very little for two years	Puzzles out large capitals with left. Right quite blind. Disks white, more so at outer parts. Ves- sels almost of natural size	No other symptoms	He doubts whether he ever could see with the right eye. He never smoked till after his eyes began to fail. Six months later he could scarcely see to count fingers; pupils small and fixed.
6; July 5, 1866; C. 42	Robert Y—; heal- thy	55; 4 months	Smoked for twenty years. Half an ounce a day for three or four years. Three or four pints of beer a day	Puzzled out the largest letters (J). Extreme pallor of outer part of each up disc. Vessels of nor- mal size	Had great diffi- culty in learning to smoke, and gave it up several times be- cause it made him ill	
7; May 31, 1866; C. 20	James H—, nurse, Haslar Hospital; healthy; married	40; 2 years	Was accustomed to smoke—quantity not stated. Had been smoking more just before eyes failed	Bare perception of light. Grey atrophy of outer side. Vessels of good size and clearly defined	Chancres and rash eighteen years ago. No relapse. Only three out of ten chil- dren have lived	He said he had often been made ill by smoking and had left off on that account, but began again. One cigar would make him ill for days.
8; Nov. 19, 1866; C. 15	Thomas G—, shoe- maker, soldier; mar- ried; healthy	30; 6 weeks	A quarter of an ounce daily for eight years	Pupils large, equal, and act fairly. 100 (Sn.) 20'. Congestion; more especially of left	No syphilis. No other symptoms.	
9; April 30, 1866; C. 1	George W—, shoe- maker; fair health; widower for 11 years	36; 4 years	Had never smoked	Pupils small, equal, very sanguine. Largest letters (J). White atrophy. Veins large; arteries much dimi- nished. Whitest next yellow spot	Liability to epis- taxis (hereditary) and griddiness	Had been troubled with muscae and "rainbows." His epistaxis had often occurred several times in the week. The amaurosis had advanced very slowly.

Number, reference, and date.	Name, occupation, and state of health.	Age, and duration of amaurosis.	Use of tobacco and alcohol.	State of eyes.	Other symptoms.	Progress and remarks.
10; April, 1866; B. 390	J. S—, a Jew merchant, from Ha- vannah; good gene- ral health	56; 1½ year	Heavy drinker and smoker	Well-marked white atrophy. So far ad- vanced that he could not direct his eyes as required.	None	
11; Oct. 27, 1865; B. 366	James P—,	42; 5 months	Half an ounce daily	Both larger than natural; fairly active. No. 19 (J.). Discs paler next yellow spot	None	January, 1866.—Has left off tobacco and taken iron and strychnia. No. 11 (J.). With + glass reads No. 6 (J.). Without glass 40 (S.) 20'. Considers himself much better since he left off smoking.
12; Sept. 25, 1865; B. 353	Francis S—; un- married; healthy; from Jersey	34; 2 years	Smoked nearly all day long for eighteen years	Pupils widely dila- ted and fixed. Lar- gest letters at 20'. Pallor of disc. Whiteness next yel- low spot	No other symp- toms. Gradual fail- ure.	
13; Oct. 9, 1865; B. 341	Thomas L—, la- bourer; hands tremu- lous	25; 11 months	An ounce daily for four years	Letter or two of 20 (J.). Artery of tolerable size. Vein not turgid. Centre depressed, dirty grey. white; edges not dis- tinct	Severe headaches for three to four months. Chancres just before eyes failed. No secondaries. Blow on his head, which stunned him, a fort- night before his sight failed.	

14; June 8, 1865; B. 294	George W—	31	Half an ounce daily for three or four years	Only largest letters (J.) prox.	—	Left off smoking Dec. 22, 1864. Nov. 30, 1865, largest letters at 20 feet. 6 (J.) at 5½".
15; May 29, 1865; B. 284	Henry K—, mar- ried; gardener	50; left 6 months, right 6 weeks	A quarter to half an ounce daily for thirty years	Moderately dilated, sluggish; left, just see light; right 20 (J.). Discs very white, margins ab- rupt; vessels dimin- ished. Left much whiter than right	—	
16; Jan. 28, 1865; B. 241	James R—, single, clerk; very healthy	30; 5 months	Smoked and chewed half an ounce a day for the last fifteen years; ounce daily last five years	Cannot make out largest letters in dis- tance. 16 (J.) prox.	—	
17; Nov. 4, 1864; B. 235	Thomas K—, watchmaker, mar- ried; pale, not speci- ally ailing	50; 10 months	Half an ounce daily; a great drinker	Large, exceedingly sluggish. Largest letters at 20'; grey-tremens, to which he supply to retina remained ish-white, margins attributes his blind- good. May 11, 1865.—Left abrupt and irregular;ness. Complained of pupil twice the size of the vessels half natural size	Steady failure after an attack of delirium and atrophy of nerve, while tremens, to which he supply to retina remained good. May 11, 1865.—Left abrupt and irregular;ness. Complained of pupil twice the size of the vessels half natural size	A marked case of anemia and atrophy of nerve, while tremens, to which he supply to retina remained good. May 11, 1865.—Left abrupt and irregular;ness. Complained of pupil twice the size of the vessels half natural size

Both 14 (J.) and 16 (J.) — Complained of
extremities. Both 14 (J.) and 16 (J.) — Complained of
testes atrophied and numbness of hands and feet.
flabby. Abeyance of "Feet like wood." Shooting
sexual appetite for
pains in legs, and cramps.
Loss of smell.

Number, reference, and date.	Name, occupation, and state of health.	Age, and duration of amaurosis.	Use of tobacco and alcohol.	State of eyes.	Other symptoms.	Progress and remarks.
18; Dec. 29, 1864; B. 239	George C—, shipwright; married	49; 7 weeks	Regular smoker; quantity not stated. Temperate in beer, &c.	Left dilated and fixed, slight divergence; sees only shadows; discs blue-white and depressed, margins distinct, vessels diminished. Right less advanced than left, and he can see capitals with it	Various blows on head; attacks of frontal headache and dim vision. Blow below left eye from copper nail eight weeks ago	Continued at work till week before admission. March 9, 1865.—In good health; cannot count fingers; not smoked since last visit; hands and feet numb (pins and needles). Discs abruptly margined and white, artery still easily seen. May 1.—Numbness continued. May 14, 1866.—Excellent health. No perception of light for nearly 12 months; no pain. Weight and numbness about abdomen; could pick up a pin. Ophthalmic examination.—Same as before.
19; Oct. 20, 1864; B. 230	William R—, publisher	45; Right 12 months; left 6 months	Half an ounce daily	Both discs white	Violent earache 12 months ago, with giddiness and over-nia. Dec. 11, 1865.—Could power sleepiness, scarcely tell light from darkness. No headache	Continued attending till February, taking strychnia. Dec. 11, 1865.—Could scarcely tell light from darkness; had gained flesh; good health; could walk twenty miles a day; left off smoking; pupils of equal size and decidedly small, absolutely motionless. With atropine

20; Jan., 1866; B. 221	John H—	47; 4 years	Freesmoker; quantity not stated	White atrophy of both optic discs	dilated well. Discs abruptly margined, dirty-grey. Vessels distinct, almost of natural size. Could direct his eyes as desired.
21; June 9, 1864; B. 203	Thomas C—, farmer; weak and pale	46	Free drinker and smoker all his life	Both discs white; quite blind	This case was a complicated one. One eye had years ago a fit with failed several years before hemiplegia. He quite recovered. Sexual functions freely indulged, but now in abeyance. No history of syphilis. Variocoele
22; June, 1864; B. 200	William McC—, boatman; married 8 months	21; Sight failing 8 months; quite blind 6 months	Smoked and drank freely, but left off both before the eyes failed	Pupils dilated and fixed; optic discs white, abrupt; artery very small, vein much diminished	According to his statement the failure of sight did not commence until four months after he had become a total abstainer, and also left off smoking. It progressed very rapidly, and he had some unusual symptoms.

Number, reference, and date.	Name, occupation, and state of health.	Age, and duration of amaurosis.	Use of tobacco and alcohol.	State of eyes.	Other symptoms.	Progress and remarks.
23; May 24, 1864; B. 196	J. R. P—, clerk; pale, rather feeble	51; Sight failing 12 months	Pipe night and morning; very steady man	Grey-white, espec- ially towards yellow spot; vessels of mod- erate size	Gradual failure; giddiness occasional- ly. No other symp- toms	Dec., 1865.—Could not count the windows, yet was annoyed by the gaslight and sunlight. Pupils equal, natural size, quite motion- less. Good general health. Ophthalmic examination as before.
24; April 14, 1864; B. 184	J. J. G—, sailor; healthy	20; Sight failing 8 months	Half an ounce daily for three years	Normal, act fairly 20 (J.). Discs grey- white; arteries very small	Simple failure. No other symptoms	Great difficulty in learn- ing to smoke, and also suf- fered much from sea-sick- ness. April 2, 1866.—Vision as before; health good. "Aw- ful headaches" for two days once in three weeks. Left off smoking after first visit, but has taken to it again.
25; Mar. 24, 1864; B. 175	Henry G—, pilot on Thames; stout, healthy looking; mar- ried 8 years	31; Sight failing 3 months	Smoked an ounce or an ounce and a half a week for 13 years; very steady	Discs abrupt, grey- white; vessels fair 13 dimensions	Gradual failure. No other symptoms.	Great difficulty in learn- ing to smoke. Liable to sickness after smoking more than usual. April 28.— Much the same.
26; B. 15	John B—	56; Sight failing 6 months	Three quarters of an ounce daily	White atrophy	Gradual failure. No other symptoms.	

27; Dec. 11, 1865; B. 134	John M—	53; Sight failing 15 months	Not stated	Atrophy commencing next yellow spot; artery much diminished	Gradual failure	The notes of this case are defective.
28; Mar. 8, 1866	William W—	37; Sight failing 1 month	An ounce a day for 5 or 6 years	Could still puzzle out letters of 2½ (Snellen)	Gradual failure	
29; June 12, 1866; B. 275	Isaac M—, quite healthy; married	35; Sight failing 12 months; nearly blind	Two ounces a week since æt. 19; temperate	Pupils medium, very sluggish; white atrophy, abrupt; vessels of moderate size. Pyramidal cataract right only. Could just see a hand before him	Gradual failure; no varicocele. No other symptoms.	Continued to smoke. His report (by letter) in August 22 was that he got worse.
30; Oct. 29, 1863	H—, a farmer-labourer; married 3 years; good health	26; Sight failing 10 months	An ounce a week for ten years; steady temperate and other indulgences	Could not see the largest letters. Both discs white	No other symptoms of cerebral disease. Gradual failure of sight. Small double varicocele, but no loss of sexual vigour	
31; Dec. 20, 1864	Philip B—, stout, florid, very strong, and in excellent health	33; Sight failing 16 months	Half an ounce a day for 15 years; very temperate	Could not see the largest letters. Pupils moderately dilated and very sluggish; discs blue-white and well defined. Central vessels of good size	Slight giddiness and occasional headache at the time the eyes began to fail	He remained under treatment for a year without material change. He attributed his disease to his having changed his occupation and been less in the open air.

Number, reference, and date.	Name, occupation, and state of health.	Age, and duration of amaurosis.	Use of tobacco and alcohol.	State of eyes.	Other symptoms.	Progress and remarks.
32 Nov. 29, 1866; C. 119	Patrick B—, an Irish carman; in excellent health; now living at Selby, York-shire	50; Sight failing for 2 years	Half an ounce a day for 20 years, and allowance of free whisky	Total blindness for three months. Both pupils sluggish; left normal size, right twice as large. Both discs quite white and atrophied. Central vessels of fair size	Sleepiness, giddiness and constant profuse ptalism occurring in the beginning of the failure of his sight	The ptalism which occurred was a very interesting symptom. It continued up to the time I saw him, and annoyed him very much. He had formerly been a car-driver in Ireland and constantly in the open air. A year before his eyes failed he gave up this and came to a more confined occupation in England.
33; Nov. 29, 1866; C. 119	Thomas W—, in good health	38; Sight failing for some months	Half an ounce a day for twenty years. Free allowance of beer	Could not see the largest letters. Right disc pale; left grey-sight white and indistinct from slight neuritis (?)	Pain in forehead; gradual failure of sight	One disc showed doubtful evidence of neuritis, but there had been none of the usual symptoms of that disease, and there was no inflammation in the other eye.
34; Nov. 29, 1866; C. 120	James H—, cabman; in good health	38; Sight failing 12 months	Half an ounce daily for many years. Has drunk spirits and ale—chiefly ale	Right could read 8 with + 16. Hypermetropia. Pupils sluggish; left disc very pale; right somewhat pale	Gradual failure of cerebral symptoms	In this instance we saw the patient in an early stage of the anæmia of the discs.

I may conveniently classify the cases in men into several groups, observing first that *all* the patients were men in the prime of life, and that their pursuits were so various that no advantage could be obtained from stating them here. In no single case, however, was the patient engaged in working in tobacco.

GROUP I.—*Men who had smoked, and in whose cases no other special cause was assignable.*—This includes twenty-seven¹ cases out of the thirty-four. All these patients had been heavy smokers, consuming, many of them, from half an ounce to an ounce a day. Most of them had, as far as I could ascertain, been moderate in the use of alcoholic stimulants. Four had been free drinkers. In all these cases the course of the disease had been much the same; progressive towards white atrophy. In none, as far as I am aware, has any other form of nervous malady as yet shown itself.

GROUP II.—*Men who had smoked, but in whom other causes were suggested.*—Five cases come into this group, and each must be briefly mentioned.

In Case 7, the patient had suffered from constitutional syphilis, but it was eighteen years ago, and he had no tertiary symptoms. It seemed not improbable that tobacco had been the cause, for he had persisted in smoking, although it had frequently disagreed with his health.

In Case 13, the man had had a chancre just before his sight failed, but no secondary symptoms, he had also had a blow on the head. It is scarcely probable that either of these events was the cause of the amaurosis.

In Case 17, an attack of delirium tremens preceded the amaurosis, and entire failure of the sexual function with a degree of loco-motor ataxy attended it. This man had smoked largely.

¹ The cases numbered in the table, 1, 3, 4, 8, 11, 12, 14, 15, 16, 19, 20, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, are those in which the patients had been heavy smokers but not intemperate in drinking. Cases 2, 6, 10, are also counted in Group I, but in them the patients had been intemperate in drinking as well.

In Case 18, the man believed that a blow on one eye had been the cause of his blindness, but there was little or no evidence in support of this conjecture. Both eyes suffered, and he had smoked freely.

In Case 21, the disease had progressed irregularly, having affected one eye three years before the other suffered. The patient, a heavy smoker and free drinker, had suffered from transitory hemiplegia eight years before. He had been addicted to very liberal sexual indulgence, and had entirely lost his aptitude in this matter during the progress of his amaurosis.

In two of the five cases it is quite open to conjecture that tobacco was the cause of the complication as well as of the amaurosis, and in the other three the possible cause mentioned was by no means a probable one.

GROUP III.—*Men in whom it seems scarcely possible that tobacco could have been the cause.*

In Case 5, the patient was aged 20, but looked like a boy of 14; his virility was, I think, certainly in abeyance. He had smoked a little for two years, but he assured me that his eyes had been failing several years previously.

In Case 9, a shoemaker, a widower, who had never smoked, had suffered from slowly progressive amaurosis for four years, but was still able to read large type. This man had been liable (hereditarily) to frequent attacks of profuse epistaxis, and during the progress of the amaurosis had been troubled with muscæ and rainbow halos. In its slow progress, and the phenomena just mentioned, his attack had differed from the usual type.

Case 22 is very difficult to deal with. The patient, a boatman from Yorkshire, had been accustomed to smoke very freely indeed, and also to drink freely. He asserted, however, that four months before his eyes began to fail he had become a total abstainer, and also left off smoking. The chief failure occurred during the two months after his marriage, and was such that he was obliged at once to give up his employment; but he asserted that his eyes were decidedly

failing ten days before his marriage, and he did not believe that that event had had anything to do with it.

On other points I must leave the cases as detailed in the table to explain themselves. As regards the influence of *abstinence from tobacco* (as a measure of treatment) upon the progress of this form of amaurosis, although I have no very definite statements to make, I have formed strong impressions. During the last three years I have held it to be a bounden duty to warn all who present the symptoms of this disease against smoking, and in only a few instances (provided the patient was seen early) did the disease afterwards progress to blindness. The impression which I had formed, before my attention was directed to tobacco as a cause, was that this disease invariably, in spite of treatment, went on to complete blindness.

The importance of the subject may be in some degree estimated by the frequency of the disease. Amongst my patients at Moorfields an average of one new case of this form of amaurosis is presented every month. My practice probably represents about a ninth of that of the Institution, and it is therefore fair to assume that not fewer than a hundred cases come before its staff every year. It is to be recollected that almost all of them are male adults in the prime of life, most of them the heads of families. I have no wish to express prematurely an opinion as to whether tobacco is, or is not, the real cause. The facts must be left to have their due weight. To find that in upwards of eighty cases we have a disproportion in the two sexes of one to eight is certainly somewhat startling, and the circumstance that in the great majority no other assignable cause can be discovered does not tend to remove suspicion.

Some of the cases support the belief that where tobacco acts injuriously there is a special idiosyncrasy as regards it, inasmuch as the patients stated that they had experienced unusual difficulties in learning to smoke.