TOBACCO NERVE DEAFNESS.

Presidential Address to the British Laryngological, Rhinological, and Otological Association, January 30, 1903.

By Wyatt Wingrave, M.D.

Gentlemen,—Let me first express to you my deep appreciation of the honour which you have conferred upon me. No one can feel that honour and its responsibilities more keenly than I do, and were it not for the confidence in your readiness to make concessions for my deficiencies and to afford me help in difficulties, I should certainly not be able to accept an office so ably and worthily held by my distinguished predecessors.

My next duty is to heartily congratulate our past President upon the unqualified success of the association during his second year of office, for which his tact, courtesy, and kindness are in no small measure responsible. Dr. Macintyre, in the regularity of his attendance, in his own natural enthusiasm, and in his lavish supply of scientific material, has rendered my position as his successor a most difficult one to occupy.

This being the first society formed in Great Britain for the study of our specialities, I do not think that a critical survey of our collected transactions would afford any disappointment to its founders, and I sincerely trust that its standard of usefulness will not suffer in my year of office. We have now two sister societies whose objects run parallel with our own; their success we most cordially appreciate. They have not supplanted the older relation, but their success has only served to emphasize the wisdom of our own founders.

With regard to our work, there is one point which I cannot overlook—viz., the great obligation which we in London are under to our provincial Fellows who so conscientiously attend the meetings. We well know their difficulties in presenting cases, consequently we must recognise that it is our duty to relieve them in that respect, knowing that we may confidently rely upon them to furnish us with other material for discussion.

Further, while maintaining a good supply of clinical material, I trust that Morbid Anatomy and Pathology will continue to occupy a prominent position at our meetings, since every facility is afforded by the Council for microscopic and other exhibits.

It has been suggested that three societies are unnecessary, and that they are in the position of having outlived their usefulness

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Neither of these views can be endorsed with reference to the British Laryngological, Rhinological and Otological Association. In the first instance, it is not purely Metropolitan, but as its title shows it is essentially British, and it does not confine its work to one particular branch of specialism; moreover, the solid evidence of its vitality is, I think, sufficient answer to the second suggestion. But there is one point which we must not lose sight of—viz., that our meetings are not entirely devoted to the exhibition of clinical cases, but include also the reading of papers and their subsequent discussion. This traditional division of our meetings into two portions is an important and distinctive feature of our Society, and will, I trust, continue to meet with your approval.

I must now claim your indulgence for deviating slightly from the orthodox address in substituting a preliminary introduction to a clinical subject, which, I venture to think, is one not without interest and importance.

We cannot fail to have observed the rapidly increasing consumption of a drug which is not only beyond all proportion to the increase of population, but promises to extend to a still greater degree; and, further, that its overindulgence (especially by youths) is likely to be responsible for serious morbid changes, some of which are of immediate interest to us in one department of our work. I refer to tobacco. Its responsibility for certain morbid visual changes has been fully established, and, observing the frequent recurrence of deafness in those suffering with tobacco amblyopia, it occurred to me that the association might be more than coincidental. This prompted a careful examination of such cases, with results which justify my submitting to you a preliminary communication on the subject.

The relationship between rhinology, otology, and ophthalmology has recently been before us in the shape of Dr. C. Ziem's paper* on "Diseases of the Eyes and Nose," and cases were shown by Mr. Mayo Collier and myself illustrating the occurrence of optic neuritis with middle-ear disease, so that the field is not a new one to us, but embraces another aspect.

Most of the cases now referred to occurred in my hospital practice, some were seen in private, and others were referred to me by my colleagues. With regard to the ocular phenomena, the scotoma cases were verified by specialists in that department.

It will suffice to briefly sketch the main features which were observed. Deafness due to tobacco smoking may be conveniently classified in three groups, according to their etiology: (1) Mechanical

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or pneumatic. (2) Irritative or catarrhal. (3) Toxic or nerve deafness.

1. *Mechanical.*—This has its origin in the habit of smoking a tightly-packed pipe, cigar, or cigarette, especially in those suffering with nasal obstruction. A violent minus or negative naso-pharyngeal pressure is exerted with each inspiration, not only upon the Eustachian tubes, but also upon the blood and lymph vessels of the parts, so leading to persistent hyperæmia, upon the symptoms and treatment of which we need not dwell.

2. *Irritative or Catarrhal.*—This form is very familiar in early morning cough and expectoration of habitual smokers. It is caused by the chemical and mechanical irritation of the smoke on the mucous membrane, extending along the Eustachian tube and inducing hypertrophic changes in that canal and its connections.

3. *Toxic or Nerve Deafness.*—This is due to the gradual accumulation of certain toxins of tobacco in the system. Whatever the actual poison may be, whether picrotoxin, nicotine, or any other, it is, as a rule, found in largest amount in the darkest, strongest, and cheapest tobaccos; *e.g.*, cut plug, cut cavendish, shag, etc., also in cigars of the Maduro strength, Oriental as well as Occidental. This poison is undoubtedly cumulative, since complete abstinence is essential to effecting any permanent improvement; mere reduction in the quantity consumed or of its strength generally proves unsatisfactory.

The effect of tobacco toxin upon the cardio-vascular system is familiar to all of us, also its influence upon the gastro-intestinal tract, which may be responsible for the production of further toxins.

But its most striking effect is upon the nervous system, as exemplified in "Tobacco Amblyopia," a disease characterized by degeneration of certain bundles of the optic nerve, known as the papillo-macular fibres, constituting scotoma, a condition associated with the loss of appreciation of the visual red waves.

Does the auditory nerve present a similar degeneration? Although at present we have no definite histological evidence, the fact that there was marked deficiency in the appreciation of low tones in 50 per cent. of the cases recorded is presumptive evidence in favour of there being some selective degeneration at work in the auditory as in the optic nerve.

The effects of the toxins may possibly be terminal and central, but these are questions which also demand careful and extensive observations, both histological and clinical.

The cases which I have examined are seventeen in number. They were those of typical nerve deafness, for which no cause

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other than tobacco abuse could be found. To save time I give you a brief abstract of their chief features.

Ages.—With regard to age, eight occurred between twenty-four and forty, nine between forty-eight and sixty-four.

Tobacco.—They all smoked very strong tobacco or cigars and in large quantities.

Deafness.—They were all subjects of nerve deafness; the appreciation of low tones was defective in eight, tinnitus and vertigo being generally well marked.

Vision.—There was marked impairment of colour sense—red—in twelve; of these four had well-defined scotoma.

Treatment.—Treatment consisted of complete abstinence from tobacco in every form, with the administration of strychnia, quinine, or bromides.

Results.—Quinine and bromides, separately or combined, afforded no appreciable effect, but strychnia pushed to full doses proved more successful. Three severe cases were completely cured in eight, nine, and twelve months respectively; nine showed marked improvement, two improved only slightly, and two refused to continue treatment.

That the improvement was in a great measure due to arrest of smoking was shown in several cases, which always relapsed on resuming the habit, although the strychnia was continued in. Improvement was again marked on abstaining from tobacco.

In conclusion, allow me to emphasize the following points:

1. That they were all well-marked cases of nerve deafness (unattributable to other causes) occurring in heavy smokers.

2. That the loss of low tones in 50 per cent. suggests an auditory equivalent for a recognised ocular lesion.

3. That the disease was symmetrical.

4. That there was impairment of colour sense in eight of them, and definite scotoma in four cases.

5. That 80 per cent. showed marked improvement on abstinence from tobacco, supplemented by drug treatment; three were cured. But the habit was so strong and the will so weak in the rest that the forecast and their results were not very encouraging.

The confirmed smoker is often as tenacious of his habit as the tea-drinker and victims of alcohol, opium, cocaine, and other habits.

Although you will doubtless find in these notes many points of weakness and many deficiencies, still, I trust I may have presented sufficient evidence to justify my selection of the subject, in view of a more thorough clinical analysis in the near future, and also of

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eliciting the views of those whose wider experience of scotoma may enable them to speak with greater confidence.

ANALYSIS OF SEVENTEEN CASES OF TOBACCO NERVE DEAFNESS.

1. C. S——, a warehouseman, aged twenty-four, complained of deafness and noises of nine months' duration (right ear). He smoked 2 ounces of shag weekly. Rinne +. Air C. – 12. Bone C. – 5. Diminution of low tones. Difficulty in appreciating red. Treatment: Quinine. Result: Marked improvement in four months.

2. Thomas M——, aged fifty, horsekeeper. Deafness both ears, with tinnitus; nine years' duration. Smoked 1 ounce of shag daily. Air C. R. – 40; L. – 30. B. C. – 30; L. – 20. Rinne –. Loss of low tones. Colour sense: Green appeared blue; red caused much uncertainty. Treatment: Bromides. He would not entirely give up tobacco, but smoked less and a milder kind. Result: Slight improvement.

3. J. B——, aged thirty-six, a clerk. Complained of deafness and noises; six months' duration. Smoked 3 ounces of dark virginia weekly. Meatus and mastoid were both –. Rinne +. Low tones lost. Colour sense: Reds dull. Treatment: Strychnia. Result: Improvement in two months.

4. E. P——, aged fifty-four, carpenter. Deafness in left ear; ten years' duration. Had been a very "heavy" smoker, but lately had reduced his allowance to $\frac{3}{4}$ ounce of shag daily. Meatus –. Mastoid –. Rinne +. Low tones deficient. He was under treatment for scotoma, which, with deafness, improved on giving up tobacco.

5. C. H——, aged fifty-four, labourer. Deafness right ear with noises and giddiness; six months' duration. Smoked $\frac{1}{2}$ ounce black cavendish daily. Both meatus –. Both mastoids –. Both Rinne +. Low tones lost. Vision nyctalopic: Slight bilateral scotoma; reds appeared brown. Treatment: Quinine and strychnia. Result: No improvement; refused to give up or diminish his tobacco.

6. A. R——, aged forty, ostler. Deafness both ears; six years on and off. He volunteered statement that he was always better when he reduced the tobacco. Tobacco reduced during last four months to $\frac{1}{2}$ ounce of shag daily. Meatus, R. – 6; L. – 4. Mastoid, R. –; L. –. Rinne, R. +; L. +. Colour sense: for reds almost gone. Well-defined scotoma. Was under Mr. Lang at Middlesex Hospital. Treatment: Strychnia. Great improvement.

7. F. K——, aged thirty-four, blacksmith. Deafness in both ears; four years' duration. Smoked $\frac{3}{4}$ pound navy cut weekly. Meatus, R. – 12; L. – 15. Mastoid, R. – 6; L. – 5. Rinne, R. +; L. +. Colour vision: Red appeared as chocolate. Faint scotoma. Treatment: Strychnia. Patient disappeared.

8. J. T——, aged sixty, painter. Deafness; ten years on and off. Smoked $\frac{1}{2}$ ounce shag daily. Meatus, R. – 8; L. – 12. Mastoid, R. – 4; L. – 5. Rinne, R. +; L. +. Low tones lost. Colour vision: Reds were "dirty." Under treatment at Moorfields for scotoma. Treatment: Strychnia; no tobacco. Result: In four months reported as better.

9. W. M——, aged sixty-four, farmer. Deafness and noises; for four years always smoked 1 ounce shag daily. Meatus, R. – 4; L. – 7; Mastoid, R. – 6; L. – 8. Rinne, R +; L. +. Colour sense not recorded. Diminution of low tones. Bromides, no effect. Strychnia afforded

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slight relief, but great improvement followed complete arrest of tobacco in seven months from commencement of treatment.

10. E. G——, aged fifty-six, park-keeper. Deafness four years. Smoked an ounce and a half dark virginia daily for many years. Meatus, R. – 6; L. – 2. Mastoid, R. – 7; L. – 2. Rinne, R. +; L. +. Colour sense normal. Low tones weak. Treatment: Strychnia; no tobacco. Result: Cured in twelve months.

11. H. S——, aged thirty-four, clerk. Deafness and noises; twenty years. Smoked ¼ pound weekly. Meatus, R. – 4; L. – 10. Mastoid, R. + 6; L. – 4. Rinne, R. +; L. +. Colour sense good. Treatment: Tonsillotomy, bromides. No change in two months. Stopped tobacco and put on strychnia. Marked improvement in two months.

12. J. S——, aged twenty-two, clerk. Deafness and noises in both ears. Duration, thirteen months. Slight smoker. Meatus, R. – 2; L. – 8. Mastoid, R. + 4; L. – 17. Rinne, R. +; L. +. Colour vision: "Dirty" reds. Treatment: Strychnia; no tobacco. Result: Improved in one month and cured in eight months.

13. T. M——, fifty-three, farmer. Deafness, noises, and giddiness. Duration, two years on and off. Moderate smoker since youth. Meatus, R. – 8; L. – 20. Mastoid, R. – 10; L. – 10. Rinne, R. +; L. +. Colour sense: Hesitates over reds. Treatment: Strychnia and no tobacco. In three months all symptoms greatly reduced, except tinnitus. Six months later quite cured.

14. M——, aged thirty, Royal Navy. (Dr. N.) Gradually increasing deafness. Duration, three years. Smoked 3 ounces of black navy cut per week; always a great smoker. Meatus, R. – 4; L. – 9. Mastoid, R. normal; L. normal. Rinne, R. +; L. +. Colour sense: Reds were magenta. Treatment: Iron, quinine, and strychnia, and no tobacco. Result: Improvement in four months.

15. M——, aged forty-eight, waiter. Deafness and noises; ten years. Smoked six cigars daily for many years. Meatus, R. – 6; L. – 6. Mastoid, R. normal; L. normal. Rinne, R. +; L. +. Low tones defective. Colour sense: Difficulty with reds. Myopic. Treatment: Quinin hydrobrom. and no tobacco. Result: Marked improvement in three months.

16. M——, aged forty-nine, fitter. (D. G.). Deafness and noises on and off twelve months. Smokes freely. Meatus, R. – 8; L. – 6. Mastoid, R. – 4; L. – 5. Rinne, R. +; L. +. Colour sense: Uncertain. Treatment: Strychnia, no tobacco, and Eustachian catheter for Ac. C. M. E. Result: Marked improvement.

17. J. J——, aged forty, barman. Deafness four years. Smoked 3 ounces of navy cut daily. Meatus, R. – 10; L. – 8. Mastoid, R. – 4; L. – 6. Rinne, R. +; L. +. Colour vision: Uncertain. Treatment: Strychnia and less tobacco. Result: Patient disappeared.

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