

Remarks on colour blindness / by P. Cullen.

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3.

PROCEEDINGS
OF THE
Allahabad Medical Society.

Vol. I.]

OCTOBER, 1882.

[No. 5.]

SOCIETY NEWS.

THE Ninth Monthly Meeting of the Society was held at the residence of Surgeon C. W. S. Deakin, A.I.M.D., on Friday the 6th of October, at 8 o'clock.

PRESENT:

Brig.-Surg. G. A. WATSON, M.R.C.S.

Brig.-Surg. T. N. HOYSTED, L.R.C.S.I.

Surg.-Major W. ASHTON, M.B., T.C., D.

Surgeon GEOFFREY C. HALL, M.R.C.S.

Surgeon JULIAN SMITH, M.B., Ed.

Surgeon J. L. PEYTON, M.B., T.C., D.

Surgeon W. DEANE, L.R.C.S.I.

MR. L. A. KIDD, M.R.C.S.

Surgeon C. W. S. DEAKIN, F.R.C.S., Eng., I.M.D., } *Joint Honorary Secretaries.*
Surgeon A. P. O'CONNOR, A.M.D.

1. The minutes of the last Meeting were read and confirmed.

2. The following gentlemen were elected Members of the Society:—

Surg.-Major C. PRENTIS, M.R.C.S., I.M.D.

Surgeon A. TOMES, M.R.C.S., I.M.D.,

Surg. A. S. W. YOUNG, L.R.C.S., Glas.,

Surg. P. A. WEIR, M.A., M.B., Aberd., I.M.D.

A.M.D.

3. The following letter received from the General Secretary of the British Medical Association was read:—

"LONDON,

"September 11th, 1882.

"DEAR SIR,

"I have received your letter of the 3rd of August last, with five forms of application for Membership, two cheques for 13s.

✓

each, and a memorial to the Committee of Council, asking that the proposed new Branch of the Association of the Oudh Branch (*sic.*) I will lay this memorial before the next Meeting of the Committee of Council on the 18th October next. I congratulate you upon your very successful labours to establish a Branch, and I hope that many others in India may now follow your lead."

NOVEMBER MEETING.

The November Meeting will take place on Friday the 3rd at the residence of Surgeon-Major H. S. Smith, I.M.D., at 7-45 P.M.

Programme.—Cholera at Allahabad (*continued*).

THE ANNUAL MEDICAL DINNER.

It was resolved that the Annual Medical Dinner, to be held in December next shall be held at Allahabad, during the race week, 11th to 16th, and that the Honorary Secretaries be requested to communicate with the Honorary Secretary of the Races, so as to arrange for the dinner being held on an off day. It was further resolved to request the permission of the Committee of the North-West Provinces Club to allow the Dinner to take place in the Club.

The attention of the Meeting was called to the printed label placed by a Pensioned Apothecary, holding the rank of Honorary Surgeon, on a bottle of medicine supplied by him to a patient, in which he is described as "Dr.—, Surgeon." This person is not possessed of a diploma.

A discussion ensued, in which it was pointed out that, although there was no excuse for the fraudulent use of titles, Apothecaries in India were in a peculiar position, there being no class of practitioners in Great Britain answering to the Indian Subordinate Medical Department. The Indian Apothecaries—Europeans or Eurasians—now receive a systematic course of instruction at the expense of Government which extends over a period of five years. After passing a competitive entrance examination the "Hospital Apprentice"

is sent to learn the rudiments of his work at a military hospital; after remaining there for one or two years he is sent to the Medical College at Calcutta or another presidency for a period of four or three years, according as he has spent the shorter or longer period in a military hospital. At the presidency he goes through courses of lectures of dissection and of clinical instruction; he passes examinations or, if he fails to pass, he is sent about his business. After passing, he gets the grade of Passed Hospital Apprentice. When a vacancy occurs he is admitted to the grade of 2nd class Apothecary. There is no doubt that many Apothecaries are very well-educated men; this is shown by the fact³ that many of them resign Government employ after the lapse of their covenanted period, go to Europe at very little expense to themselves, obtain British qualifications after a few months' residence, and either compete for commissions in the Medical Services or go into private practice. There is no doubt that many of these Apothecaries have a much better knowledge of their profession than many of the holders of American and Foreign M. D. degrees, who are to be met with among Medical Missionaries in India, possess. Indeed, when men who have attended* *two years' courses* in the Colleges of the Queen's (now Royal) University of Ireland can go over to Scotland and obtain legal qualifications to practice—their own University requires three years' attendance—it is more than doubtful, even admitting that the teaching is not so thorough, whether the educational standards of the presidency colleges is not as high as that of some of the British Medical Corporations.

On the other hand, many Apothecaries who joined the service for some years subsequent to the Mutiny only received instruction in Military regimental hospitals without going through a systematic course of study at a Presidency Medical College.

It was resolved that the Honorary Secretaries be desired to write to Mr.——, requesting him to abstain from using titles to which he has no legal nor moral right; and that if he continues the

* *Vide* Dr. Jacob's evidence before Royal Commission on Medical Acts.—(*Lancet*, II., 1882, p. 506).

practice complained of, the Society will consider it their duty to bring the case to the notice of Government through the official channel.

ORIGINAL COMMUNICATIONS.

REMARKS ON COLOUR BLINDNESS.

By SURGEON-MAJOR P. CULLEN, M.D., I.M.D., *Civil Surgeon, Khundua.*

This subject has occupied attention from time to time and is still but imperfectly understood: hence every little addition to our knowledge will be useful.

For the past seven years I have had to examine many candidates for railway employment, and among these workmen who have left one line to try and better themselves on another; and have found engine-drivers, with good certificates of work and conduct from their last line, who were perfectly colour blind. These men could work safely in the day-time, from having good vision and being able to see whether the signals were up or down, but at night must have depended entirely on their firemen to tell them the colour of the signal lights.

During the early part of this year I examined 430 men belonging to the railway, and of these found 15, or 3·49 per cent., were colour blind. These men at the time were all on active duty. Reviewed according to castes they were as follows:—

Christians, Europeans, and Eurasians, 86; colour blind 1, or 1·16 per cent.

Parsees	...	...	3	„	none.
Muhammadans	...	...	41	„	3, „ 7·31 „
Hindus	...	...	300	„	11, „ 3·66 „

According to grades or service they were:—

					[was an European.]
Guards and brakemen...	...	103; colour blind 1, or 0·97 per cent. (This			
Signallers	...	22	„	3 „ 13·63	„
Porters, &c.	...	110	„	6 „ 5·45	„
Station-masters and Traffic Department.	37	„	1 „ 2·70	„	
Road maintenance and Engineer's Department.	158	„	4 „ 2·53	„	

These were all examined by Holmgren's method with loose skeins of Berlin wool. Knowing how ignorant the majority of even Europeans and Eurasians are of names of colours, and that Muhammadans and Hindus have no names for gradations of shades, it was useless to ask these men to name the varieties shown them; but a skein was handed to the person, and he was told to pick out, from a lot lying on the table, a skein of a similar colour; and this was done with three or four different skeins before the man was passed. Great ignorance and hesitation was often shown by those (such as coolies) not accustomed to noticing and choosing colours; and frequently it was found that a man would readily name a colour in a natural object, such as a tree, bush, or animal, and yet hesitate with the skeins.

The large proportion of colour blind among the signallers may be due perhaps to their occupation, the straining of the eyes in watching the fine needle working (generally) on a green dial; these men are usually of the well-to-do class, are educated, and intelligent men, but in each case were completely colour blind.

I subsequently extended my examination to native children and examined 539 attending schools; there were 471 boys and 68 girls of ages varying from 5 to 16 years and of all castes. Among these I found 12 boys affected, but no girls; but the number of these is too small to form any decision on. Of the affected boys, two were six years of age and two seven years old, and therefore too young to have had their sight affected either by learning or other occupation. This percentage (2.54) is much the same as was found by Dr. W. Brailey's committee of the Ophthalmological Society (*Lancet*, 23rd April, 1881) among European school children.

The statement of Dr. Macgowan (*Lancet* of 14th January, 1882), that he had failed to find Daltonism in Japan and Indo-China, and that it is absent among the Nubians, may be due to his examinations being confined to the tribes on the coasts; for I believe it is now pretty well ascertained that it prevails among all castes and tribes in the interior of this peninsula, and his suggestion that

the exemption of the above races may be due to their having dark hazel irides is not borne out by my examinations. Neither is Dr. C. Roberts' statement (*Lancet of 21st January, 1882*), that the colour of the hair of the different tribes examined by him in America seemed to influence this affection, or that fair-complexioned nations, with light-coloured eyes, are those which suffer most from colour blindness. In each of the 969 individuals I noted the colour of the eyes. Among the 430 railway servants I found 203 had dark hazel irides, 140 light hazel, 56 black, 28 grey, and 3 blue; all the blues and greater number of the greys were in Europeans, and about one-fourth of the black in Eurasians. Of the fifteen affected with colour blindness nine were dark hazel and six slight hazel. Among the children there were:—

				Boys.	Girls.
Dark hazel	...	...	...	212	18
Light hazel	...	...	...	209	40
Black	...	...	...	44	10
Brown	...	...	...	6	0

and of the twelve boys affected eleven had dark hazel and one light hazel irides. Thus, although the eyes examined were 543 dark and 426 light, the affected were 20 dark to 7 light, or nearly in the proportion of three to one. It will be interesting to know the experience of other Indian Surgeons on this point, which seems opposed to that of observers in Europe.

That colour blindness has no effect on the vision is admitted by all, but few perhaps are aware of the number of natives who suffer from myopia. In my examination of railway employes I have to test the strength of vision also, and among the 430 railway men examined—after excluding several who had lost one eye; others with cataract, &c.—I found 35 who were myopic, some of whom could read only No. 20 test type at 5 and 8 feet distant; others, uneducated, who counted No. 12 test dots at 4 and 8 feet; while the distant vision, for large objects, of many extended to only 50 to 80 yards. But of the colour blind, only one man was myopic, and he was very much so, as he could only read No. 12 type at 4 feet, and his distant vision did not extend over 50 yards. Among

the boys, not one of those affected with colour blindness was myopic. Hence it is evident that colour preception and vision are quite distinct, and the completely colour blind may have very distinct and strong vision.

As even the smallest degree of myopia will unfit a man for the British Army, the Army Medical Officers are not much concerned in ascertaining the degree of this defect in recruits, and it is well known that this ailment is hereditary. But in examining the school children I could not help noticing that, from the carelessness of the teachers, the scholars acquire vicious habits of sitting and holding their books, by which their sight is injured. Some, as it were, lie over their lesson books, while others hold their faces down to the page, and thus acquire habits which it is exceedingly difficult to break off. Not a few of these children I found using only one eye, not that there was any defect in the vision of the other, but from holding their heads on one side they had accustomed themselves to use only one eye; and some who appeared myopic at first, when exercised for a short time in holding and looking at their books at 18 and 24 inches distant, could read well enough, thus showing it was a mere habit. Yet, I fear, this grows by continuance and becomes second nature to them, and I have frequently been obliged to reject young men (seeking Government clerkships) for myopia that I believe was acquired in this manner. This points the necessity in all cases of railway accidents that not only should the parties concerned be tested for colour blindness, but also as respects their vision.

Without venturing to enter into any theory of the case of colour blindness, whether of Young-Helmholtz's of special nerve fibrils for each colour, or Herring's, that colour sensations are disposed in couples, but leaving these eminent physicists to evolve and perfect their theories as to the nervous centres, or layers of the retina, which are concerned in the reception and acculyses of the rays of light, by which over-preception of colours result, the ordinary practitioner, by accumulating observations on all relative points, may help in the elucidation of this difficult subject; and

such only has been my object in bringing these notes to your attention, and that they may lead others to give their experiences also.

CASE OF PAROTID TUMOUR.

By SURGEON-MAJOR P. CULLEN, M.D., R.U.I.

A Hindu about fifty years of age, weak, debilitated and a confirmed opium-eater, presented himself and asked to have a tumour removed from his right cheek, as lately it interfered with his eating. He stated that for years (he could not tell how many) his cheek had been swollen, but for the last two years this had been increasing in size. He had had an escharotic applied in the hopes of burning it away. There is no swelling of the cervical glands, nor any symptom to show the tumour is of a malignant nature.

Present state.—There is an oblong tumour on the right cheek, four inches long by three in breadth, extending from angle of mouth to the ear and dipping behind the ascending ramus of jaw. It is hard and slightly moveable, and the centre, about two inches by one and a half inch, is ulcerated; there seems to be some paralysis of this side of the face, the mouth being drawn up on the opposite side. The facial and transfacial arteries are beneath the tumour, and there is some pressure on the external carotid; the thin wasted subject allowing the pulsations of this to be distinctly seen. Having explained the dangers of the operation to the man, and that possibly the paralysis might continue or even be increased, and he still wishing to have the tumour removed, he was placed under chloroform (of which he took one and a half ounces before he was rendered insensible), and two elliptical incisions were made, to save as much skin as possible, and the dissection made from the mouth backwards, but it was impossible to get the portion behind the angle of the jaw out without a third downward cut. During the

