ACCOUNT OF A CASE
OF
DEFECTIVE POWER
TO
DISTINGUISH COLOURS.

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THE Medical and Chirurgical Society having honoured a case of imperfect vision, which I formerly sent, with a place in its Transactions, I am induced to transmit the account of a similar case which has more recently come within my knowledge. Although it bears a close resemblance to the former, I nevertheless am tempted to present it, since it may be well as a matter of curiosity that cases of this anomalous nature should be collected and compared with each other with a view to the explanation of the cause of the imperfection.

I give the case in the words of the gentleman who is the subject of it, and who lives near Mauchlin in Ayrshire.

“ My eyes are of the same colour with the youth’s you mention*, grey, with a yellow tinge round the pupil; the pupil is rather small but not remarkably so. The colour I am most at a loss with is green, and in attempting to distinguish it from red it is nearly guess-work. Scarlet in most cases I can distinguish, but a dark bottle-green I could not, with any certainty, from brown. Light yellow I know; dark yellow I might confound with light brown, though in most cases I think I should know them from red.

“ The different shades of red and green I know not to which they belong; but when they are before me, I see a difference in the shade. All the shades of light red, pink, purple, &c. I call light blue. But dark blues and black I think I know with certainty. Though I see different shades in looking at a rainbow, I should say it was a mixture of yellow and blue, yellow in the center and blue towards the edges. I have red crimson curtains on the window of my bed-room, which appear to me red in candle-light, and blue in day-light. What is called invisible green is not so to me, it is too dark, but if railings were painted red, I could not distinguish them from the grass.

“ The grass in full verdure appears to me what other people call red, and the fruit on trees when

* Referring to the case published in the Med. Chir. Transact. Vol. VII.

red, I cannot distinguish from the leaves, unless when I am near it, and then more from the difference of shape than colour. A cucumber and a lobster (boiled) I should call the same colour, making allowance for the variety of shade to be found in both, and a leek in luxuriance of growth is to me more like a stick of red sealing-wax than any thing I can compare it with.

“ The only advantage I have observed from this peculiar vision is, that I see objects at a greater distance and more distinctly in the dark than any one I recollect to have met with ; this I discovered many years before I was aware of my defective vision in colours. I am in the 49th year of my age, and I do not find my sight getting dim as it generally does in persons before that time of life.

“ I am the youngest of a family of ten children, nine of whom arrived at maturity. I had a brother who died in 1791, and who I since find could not distinguish colours ; I can now only say that this defect in him was known, but nothing farther that I can communicate with certainty ; with this exception, I am the only one in whom this defect was discovered, nor have I heard of its existence in any of my ancestors. I have four nephews and four nieces, and I think the last time I saw my only surviving brother, he told me a similar defect had been observed in his youngest daughter, a girl about 12 years of age. My own family consists of

three sons and two daughters: the eldest a boy of 17, the youngest a girl about three years old. A boy and a girl have dark eyes like their mother, the other three have eyes something like mine, but there is no yellow tinge round the pupil, and it is larger than in mine; in none of them as yet has any defect of vision been discovered; they frequently amuse themselves by bringing me bits of cloth of various colours, and ask me, 'What colour is this?' When I pronounce my opinion, it generally creates a burst of laughter in the group, a proof that it appears very different to them.

"Capt. W. a neighbour of mine, I understand, has a similar defect, and also several of his relations, but I am sorry to say that he declines writing on his case."

Such is the statement which this intelligent gentleman favoured me with. In replying to it, I enclosed a circular spot of red upon a white ground, the diameter of the circle being about an inch and a half, and on the opposite sheet a similar spot painted green. I requested him to look steadily at the red spot by a strong candle-light until the eye was fatigued, when, withdrawing the spectrum, he was, with his eyes half-closed, still partially to admit into them the rays from the candle, and to remark whether any spot then appeared, and of what colour. He was afterwards to make the same experiment with the green spot. I, of course, need

not remind you that in these well-known experiments, the eye after being fatigued with dwelling on the red spot, has the appearance of a green spot presented to it and *vice versa*. His statement of his trial of these experiments is as follows :

“ In looking at the spots you sent me by a strong light of a candle, then removing the paper, and partly shutting my eyes in the way you describe, I see no spot of any kind round the candle. My eyes do not dazzle or become dim in looking at the spot for half an hour at a time, but they get very painful and do not recover till I have slept a night. I have shewn your letter to many of my acquaintance, and the result has been almost invariably as you describe, namely after looking at the red spot for a minute or two, then removing the paper, and nearly closing the eye or eyes, they see a green spot where the red was before, and the reverse when they have looked at the green one.”

Ludlow, April 26, 1818.