9.

ADDITIONAL NOTES

ON

DIABETIC CATARACT.

By JOHN F. FRANCE.

When drawing attention, in the early part of last year, through the medium of the 'Ophthalmic Hospital Reports,'[1] to the above-named affection, I was unaware of any previous reference to it, except a few words penned by Dr. Mackenzie, of Glasgow.[2] It subsequently appeared that Dr. Duncan, of Edinburgh, had also incidentally remarked, "In diabetic patients there is a tendency to cataract."[3] But, with the exception of these passing allusions, the existence of any specific connection between cataract and diabetes, had, I believe, until the date of my paper, been entirely overlooked. Since that time, several additional examples have, by the kindness of different observers, been communicated to me; and the occurrence of others has been notified more or less directly. I am therefore, as the subject is somewhat novel, and the information upon it scattered, induced to make the following concise *résumé* of the facts which have been elicited hitherto, as far as I have been fortunate enough to meet with them; observing, at the same time, that other isolated instances may in all probability have been published besides these, and, being isolated, have escaped attention.

Dr. M'Kenzie records his experience in the following words:

[1] January, 1859.

[2] 'Diseases of the Eye,' 1854.

[3] Footnote in Translation of Braun on 'Uræmic Convulsions.'

"I have in three instances seen lenticular cataract attack women of from eighteen to twenty-five, labouring under diabetes mellitus. I have also met with the same complication in males at a later period of life." Hence it is apparent that this eminent surgeon has encountered at least 5 *cases*.

Dr. Duncan's remark, he has informed me, was grounded on personal observation; for, by a curious coincidence, he had met with diabetes associated with cataract in 3 *cases* simultaneously.

My own contribution already referred to, comprised a narration of 4 *cases*.

Mr. H. Walton has given[1] an interesting account of 1 *case*.

Mr. Wilde, of Dublin, though unable to recognise any connection between diabetes and cataract, has seen the complication[2] in at least 2 *cases*. [His words are: "I have seen patients labouring under diabetes, where cataract also existed;" and again, "certainly, cataract operations in diabetic cases are by no means favorable"—language which implies a degree of familiarity with such cases.]

Mr. Veasey, of Woburn, kindly enabled me to quote in detail[3] from his practice, 1 *case*.

Dr. John Sloane, of Leicester, has obligingly directed my attention to his record[4] of 1 *case*. The patient, a young woman, had cataract form in both eyes in the course of diabetes, of which she ultimately died. The character of the cataracts was not especially noted; no operation was performed.

Dr. W. Newman, of Fulbeck, Grantham, has most kindly communicated some particulars of 2 *cases*, "which," he observes in his letter to me, "so far as my brief notes go, corroborate your description of the affection." . . . .

"Thomas S—, æt. 17, admitted (into the Salop Infirmary), April 14, 1855, discharged incurable, June 2d; had had diabetes nearly two years, passing from twelve to sixteen pints of urine per diem. Cataract in both eyes far advanced;

[1] 'Med. Times and Gazette,' Nov. 12, 1859.

[2] Ibid., Dec. 3, 1859.

[3] Ibid., Dec. 17, 1859.

[4] In the 'British Medical Journal' for 1858, p. 425.

sight failing six months; almost complete blindness for last three months."

"Margaret J—, æt. 34, admitted June 16, 1855; diabetes twelve months, probably eighteen months; weakness of left eye five months, now quite blind; lens quite opaque; right eye cataractous, but not so far advanced.

"No operation was attempted in either instance; and I speak from memory when I say, that in both cases the cataracts were believed, from bulging, &c., to be soft."

Mr. Barton, of Dublin, has also been good enough to furnish me with a notice of 1 *case.*

"John R—, æt. 43, was admitted into the Adelaide Hospital in December, 1858, under the care of Dr. Duncan, for diabetes. Soon after his admission, Dr. Duncan requested me to examine his eyes. Upon doing so, I found the lens of the right eye perfectly opaque, while that of the left was partially so. The patient could not discern anything with the right; and with the left eye, when the pupil was well dilated, only large and distinct objects. The diabetes was far advanced, and the results of operation in such cases having been found so unfavorable, the idea was not entertained in this case. The patient left the hospital after remaining under my observation for two or three weeks, and I heard of his death in April or May."

At the time of writing, a fresh and very characteristic example has been admitted into the clinical ward of Guy's, which is quoted below. This case, added to those just enumerated, raises the total which I am enabled to cite to 21—a number no doubt very far short of what extended inquiry might elicit; but still, I think, sufficient to prove the reality of the ophthalmic affection which I have termed Diabetic cataract, and suggestive also of its comparatively frequent development in the course of the parent disease; for all these examples rest on the authority of living English authors.

The history of the case now in Guy's (from the notes of Mr. Minns) is as follows:

Emeline D—, æt. 34, a single woman residing in Chatham, was admitted under the care of Dr. Pavy, July 18th, 1860. She is a pale, emaciated, prematurely aged person; but states

that her health, previously to this attack, was always good. She ceased menstruating two years since, and immediately after noticed an increase in the quantity of her urine. She has passed as much as six quarts during twenty-four hours; hunger and extreme thirst, with general exhaustion, are the predominant symptoms; she sleeps soundly, and is not troubled with cough or headache. About five months since she first noticed impairment of vision. This symptom came on gradually, affected both eyes equally, and was daily getting worse until within the last two months, during which time it has remained stationary. At present she is able to walk about the ward without assistance, and can tell large objects; but cannot see sufficiently to define their outlines, nor for the purpose of reading. There is no pain in the eyes, which appear in all respects healthy; but that there exist symmetrical, opalescent, lenticular cataracts (with superficial striæ) of unusual bulk. They are indeed so large, as to press the iris forward into close proximity with the cornea, leaving but a shallow interspace for the aqueous humour. The pupillary movements are sluggish, apparently from this mechanical impediment; since, on every contraction, the curtains are drawn laboriously over a projecting convex surface.

Under the treatment adopted by Dr. Pavy, the urinary complaint had greatly improved by the 10th of August. She had been ordered on admission Tinct. Opii ♏xx ex Jul. Ammon. ter die; and the diet had consisted of greens, gluten-bread, meat ℥xij, sherry ℥iv, daily. While in the clinical ward she passed the following quantities of water in twenty-four hours:

July 19th.—4	quarts,	of specific gravity	1040,	saccharine.
„ 20th.—6	„	„		„
„ 21st.—4	„	„		„
„ 22d. —3	„	„		„
„ 23d. —3	„	„		„
„ 24th.—2	„	„	1045	„
„ 25th —3	„	„		„
„ 27th.—3	pints	„		„
„ 31st.—2	„	„		„

Aug. 4th.—2 pints only; but equally saccharine, as at first. She was transferred to the ophthalmic wards on the 12th

of August, where she continued the same constitutional treatment as before. Mr. France, considering the degree of useful vision still retained, and the risks attending an operation in her exhausted condition, recommended merely palliative treatment locally, which was also most congenial to the patient's inclination. The use of atropine was therefore prescribed, and she was shortly replaced under the physician's care.

Perhaps I might add to the above catalogue a case mentioned in the current number of the 'Ophthalmic Hospital Reports,'[1] in which sugar in the urine coexisted with, or had preceded, cataract. The case, however, is given rather loosely; and there is room for doubt whether it was really one of the kind under consideration, or merely an example of the casual coincidence of the two affections.[2] From the published account, it is uncertain whether the elimination of sugar by the kidney continued, or had ceased, at the time of observation; whether both eyes, or one only, were involved, &c.; but the lens was opaque in various strata, and was soft, the patient's age being forty-four. Keratonyxis, and afterwards linear extraction, were performed on the left side, and "the eye recovered well from the operation."

Into the etiology of this class of cases, I refrain from entering further; but cannot, in connexion with that point, forbear alluding to the very remarkable facts lately brought to light by the experiments of Dr. Weir Mitchell. They are published in the 'American Journal of the Medical Sciences for January, 1860;' and are corroborated by those of Dr. Richardson, still more recently related to the Medical Society of London, and partly printed in Dr. Brown-Séquard's 'Journal de Physiologie' for July.[3] These investigations seem to have a direct bearing upon the subject before us; for they show conclusively, that in several of the lower animals the abnormal introduction of sugar into the system (whether by immersion of the body in syrup for a sufficient time for the osmotic process to take place freely, or by injection beneath

[1] No. 11, p. 349.

[2] I wrote to the narrator, requesting the communication of any further particulars in his possession, but have not been favoured with any reply.

[3] "The Synthesis of Cataract."

the integument) is almost certainly followed by the development of lenticular cataract. The analogy would appear close between the artificial production of opacity of the crystalline in this mode, and its natural formation in the course of diabetes mellitus.

But I leave the elucidation of the theoretical question to others, and will merely in conclusion repeat the description I originally gave of the characters displayed by Diabetic cataract; a description, the fidelity of which has been confirmed by independent observers, and with which the last case at Guy's closely corresponds. "The cataracts have in every example been symmetrically developed on both sides; the lenses have increased remarkably in their antero-posterior diameter, so as to encroach upon the depth of the anterior chamber, and even to interfere mechanically with the free play of the iris. The opacity has attacked portions of several strata of the crystalline at once, leaving intermediate spaces for a while transparent. The colour and bulk of the cataracts have invariably indicated their soft consistence, which was proved by operation in two persons, though respectively of 'middle,' and of forty-eight years of age. Lastly, the ocular affection has only arisen after considerable duration of the renal malady (a circumstance which may tend in some degree to account for the comparative rarity of their union); and there has, in no case, been reason to suspect further disease of the eye-ball."

24. Bloomsbury Square, W.C.

May 17. 1861

My dear Sir.

The pressure used in taking up arteries, only providing that the particular part are of convenient (i.e. full) length, & that their ends are ~~[illegible]~~ so tortured as to take up, & hold fast, a fold of any

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