Eyestrain and epilepsy : a preliminary report / by George M. Gould and Arthur G. Bennett.

26.

[Reprinted from *American Medicine*, Vol. IV, No. 11, pages 416-417, September 13, 1902.]

EYESTRAIN AND EPILEPSY: A PRELIMINARY REPORT.[1]

BY

GEORGE M. GOULD, A.M., M.D.,

of Philadelphia, Pa., and Westfield, N. Y.,

AND

ARTHUR G. BENNETT, M.D.,

of Buffalo, N. Y.

For the purpose of making a test as to the possible influence of eyestrain upon the etiology and cure of epilepsy, Dr. Gould had requested of Dr. William P. Spratling, superintendent of Craig Colony, Sonyea, N. Y., the privilege of diagnosing the ametropia, etc., in a certain number of cases of patients of the colony, and of prescribing spectacles for such as seemed in need of them. Dr. Spratling and the trustees gladly accepted the offer, and the trustees voted $100 toward defraying the expenses of the spectacles.[2] Dr. Bennett consented to associate himself with Dr. Gould in the tests and in drawing up the final reports.

The examinations of the eyes were begun on August 18, 1902, and continued for five days.

This preliminary report is published in order to show those interested the object in view, the enormous proportion of epileptic patients suffering from morbid optical conditions of the eyes, and if possible to incite similar tests by others.

We examined in all 78 patients, the youngest 10, the oldest 59 years of age, the majority being young or middle-aged adults. Of these 78, two were excluded because of organic diseases of the eyes which rendered them useless for the purposes of the tests in view. Five more were excluded because of the impossibility, due to psychic or ocular amblyopia, of diagnosing the ametropia. This left 71 cases. Of these 3 were excluded because the ametropia was of so low a degree that it was

[1] Published with the kind consent of Dr. William P. Spratling, Superintendent of Craig Colony.

[2] The Buffalo Optical Company, of Buffalo, offered to furnish the spectacles at cost, and besides this they sent a member of the firm twice to the colony to attend to the optician's work. Drs. Gould and Bennett gave their professional services gratis.

thought negligible. These patients needed no glasses, either for the relief of ocular conditions or of reflex results. Only about 4%, therefore, 3 out of 71 cases, seemed to us to have eyes so near normality of optical conditions that they required no further attention.

Our tests, therefore, concern 68 cases, 35 men and 33 women. These were chosen for us by the superintendent regardless of all conditions of epilepsy, age, etc., except that we requested that only patients be given us who were sane, and who could read.

The errors of refraction were estimated only after thorough paralysis of the accommodation by means of homatropin and cocain. Dr. Bennett diagnosed the muscle-imbalance, made the opthalmoscopic examinations, and estimated the refractive errors objectively by means of the retinoscopic method. Dr. Gould made the subjective refraction and accommodation tests, and dictated the prescriptions. The subjective tests were in all cases those finally relied upon when the patients' answers could be trusted, and the results seemed the more accurate. Of the 68 cases there were:

13 cases, approximately 20%, of myopic or compound myopic astigmatism.
54 cases, approximately 80%, of hyperopic or compound hyperopic astigmatism.
33 cases, approximately 50%, of unsymmetric astigmatism.
15 cases, approximately 22%, with normal acuteness of vision (with correction).
23 cases, approximately 34%, with moderately subnormal acuteness (with correction).
30 cases, approximately 44%, with 20/40 vision or less (with correction).
3 cases only had regular, isometropic, compound astigmatism.
1 case only had simple regular astigmatism.
1 case only had simple hyperopia.
0 case had simple myopia.
9 cases were absolutely isometropic, *i. e.*, about 77% had anisometropia.

The muscle-imbalances of any high or complicating significance were unexpectedly absent. Indeed, in but one case did we think them worth consideration, so far as final correction was concerned.

The astonishing fact, and one that we think deserves most serious attention, is the enormous proportion among these patients of cases of injurious astigmatic and anisometropic defects; 67 of 68 cases had astigmatism; and it is most noteworthy that about one-half of the entire number of patients had unsymmetric astigmatism, a defect which almost inevitably produces the most

injurious results upon cerebral and assimilative function. This terrible incidence of unsymmetric astigmatism in epileptics is, we judge, 20 or more times as great as in ordinary patients. We do not say that these high and most injurious ametropic defects caused the epilepsies of these patients. That can only be determined in the future by the careful records of seizures to be kept and compared with those of the past. If none of the patients is cured by the relief of eyestrain it would still not disprove the theory that in a certain number the eyestrain might have been the initial cause. And even if this should ultimately be shown an error, the duty of the State and the philanthropic to relieve these patients of the other morbid effects of these atrocious optical defects is one that to longer defer becomes the great st cruelty. We have no hesitancy in saying that sewing or other hand work, without proper glasses, with very high and irritating unsymmetric or other astigmatisms, and with anisometropia, is ruinous to health in one or several of many ways.