Conclusions

A study of the comparative anatomy of the angle of the anterior chamber in mammalia demonstrates the following:—

(1) The anatomical conditions in the eye negative aqueous formation by mere physical operations.

(2) The first insurmountable obstacle to the theory of aqueous formation by dialysis or filtration or any combination of the two, is the fact that the stroma of the ciliary body and processes is in free communication with the aqueous at the angle.

(3) The second and equally insuperable objection is the presence of the double layer of epithelial cells covering the ciliary processes and lining the back of the iris,

(4) The aqueous cannot be a dialysis from the capillaries of the ciliary processes because such a fluid will still be on the wrong side of the ciliary epithelium, only to drain directly into the angle.

(5) The aqueous cannot be a filtration as there is no difference of hydrostatic level between the two sides of the ciliary epithelium.

(6) The aqueous cannot be a filtrate-dialysis as the components of the combination are mechanically ineffective.

From the clinical aspect, the condition of iris bombé and its relief by iridectomy are practical proof that the epithelium covering the processes and back of the iris is not an inert membrane. Only by secretory activity can fluid be transmitted from the capillaries of the ciliary processes into the posterior chamber and iris bombé results because pigmented iris epithelium is not porous. Filtrate dialysis is a conception of function operating without a mechanism.

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“BILATERAL (MESIAL) DEFICIENCY OF THE SCLERA”: SCLERAL PLAQUES*

BY

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A REPORT of another case of scleral plaques may be of interest. The reader may be referred to the previous articles on this subject in the issues of the Journal for October 1937, pp. 534-537, January

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1939, pp. 44-50, and March 1939, pp. 191-204, the second of these being by Dr. Arthur M. Culler, and the first and third by myself.

At the bottom of p. 204, Vol. XXIII, March 1939, I described, in a patient with definite bilateral mesial (*i.e.* nasal) plaques, a "strong suspicion" of bilateral temporal plaques, adding that this was the only instance in which I had seen lateral (*i.e.* temporal) plaques. I may add that my secretary, whose attention I drew to this case, regarded the temporal plaques as showing moderately well, *i.e.*, with more than a "strong suspicion." She said that perhaps I was not ready to see this evidence in view of the fact that I had already described this condition as a mesial (nasal) one. Since I published that article (March 1939) I saw the following case which conclusively reveals that the condition is not necessarily confined to the mesial area.

A lady aged 70 years came for glasses. She had mild iridocyclitis as revealed by keratic precipitates and pupil adhesions. In the left eye there was a conspicuous small dark sharply defined area of the sclera on the temporal side. Its upper end was about on a horizontal level with the middle of the cornea (Fig. 1). When

FIG. 1.

illuminated as described in the article in October 1937, its edge appeared highly refractile. The dark tone doubtless indicated that the hyaline change had penetrated the sclera to a depth closely approaching the ciliary body. The measurements were: A-B, 4.5 mm.; C-D, 2.0 mm.; C-E (limbus), 4.5 mm. The temporal edge, D, was sinuous with slight salients. Its lower end, B, was on a horizontal level slightly above that of the lower edge of the cornea. Its long axis was so inclined as to be more or less parallel with a tangent to the nearest point on the limbus.

At first I could see no corresponding temporal change in the right eye: there was no dark area. But on searching I found a plaque as shown in Fig. 2. It was equally sharply defined by a refractile edge but as it was not dark it presumably penetrated to a lesser depth than the plaque in the left eye. The measurements were: F-G, 2.75 mm.; H-K, 1.6 mm.; K-L (limbus), 4.5 mm. Its lower end, G, was on a horizontal level with the lower edge of the cornea. Its long axis was so inclined as to be approximately parallel with a tangent to the nearest point on the limbus.

No plaques were evident in the upper or lower parts of the sclera (*i.e.* beneath the eyelids) in either eye.

Examination of the mesial (nasal) region of each sclera revealed no plaques, but optical sections of the surface of each eye in the

FIG. 2.

regions shown respectively by M and N revealed some surface flattening (or even slight concaving) in a small area. This apparent flattening must be regarded, for what it is worth, with reserve. Owing to the presence of the overlying conjunctival tissue, optical sectioning of the surface of the sclera to estimate its curvature is not as reliable as sectioning of (*e.g.*) the "clean" surface of the cornea for a similar purpose.

Of the qualifying terms I suggested originally, at the bottom of page 537, October 1937, it would seem that "bilateral" and "intagliated" are justified. Clearly the word "mesial" must now be dropped, though it would seem that these scleral plaques are found much more commonly on the nasal side than elsewhere. (It should be mentioned that in none of my early cases did I look

beneath the upper and lower lids.) Miss Ida Mann's suggestion (mentioned in the *Journal*, March 1939, p. 191) and Dr. Culler's evidence (January, 1939) strongly indicated that the word "developmental" should be dropped. As Dr. Culler pointed out, all the patients so far recorded with this condition have been elderly.

I may take this opportunity to add that I am now aware of a possible reason for having, in my original article, overlooked this characteristic age-incidence and so for having allowed myself to suggest that the condition was "developmental." In the original article (October, 1937) I mentioned the memory of some cases which I had come upon some dozen or more years before, the records of which I had destroyed. I then had a definite idea that amongst these few previous cases was one of a girl aged about 8 years. This patient, now aged about 24 years, came back to me recently. I had not seen her since she was eight, and her mother reminded me why she had brought her child to me some sixteen years ago. In each eye, on the mesial side, a hole in the sclera for the transmission of a perforating artery was very conspicuous, being much larger than normal and dark, especially in one eye. Her mother had noticed this one day and had brought her to me because she thought there was an embedded foreign body. I had then (sixteen years ago) made notes of this case which were put away among the various "slit-lamp" records which I destroyed later. Thus, I think, did a memory of this case, unrelated to scleral plaques, influence me when writing my description in October 1937 and lead me to think that they could occur in a child.

I have entitled this present communication "bilateral deficiency" only for the sake of continuity of reference. Clearly Dr. Culler's term "scleral plaques" is more suitable, and I would propose to use it, and to drop the former term, should I have occasion to make any future reference to this condition.

ANNOTATION

Dangerous Drugs in War-time

"You alarm me!" said the King. "I feel faint—Give me a ham sandwich!" . . . "another sandwich!" said the King. . . . "Hay, then," the King murmured in a faint whisper. . . . "There's nothing like eating hay when you're faint," he remarked to Alice as he munched away. Alice, it will be remembered, suggested that cold water, or some sal-volatile would be better. "I didn't say there was nothing *better*," the King replied, "I said there was nothing like it."