CORRESPONDENCE

OCULAR PRESSURES

To the Editor of THE BRITISH JOURNAL OF OPHTHALMOLOGY

SIR,—Mr. Kerry, in his letter on this subject in the last issue of the *Brit. Jl. of Ophthal.*, raises the question of the mean arterial pressure in the eye. He objects to the formula: $\text{systolic} + \text{diastolic}/2$ which I employed, and suggests alternatively the estimate of Donders: $\text{systolic} + 2 \text{ diastolic}/3$. He says that a glance at a sphygmographic tracing shows that my formula cannot be accurate. The formula was chosen deliberately, and I do not think that a sphygmographic tracing can be legitimately compared with the variation in the pulse pressure in the eye. In the former the systolic crest is undoubtedly accentuated as it travels along large arteries, as the brachial, partly because of the transference of the kinetic energy of a fluid in rapid motion into stress when the flow meets with resistance, partly because of the formation of breakers in the transmission of the pulse wave, and partly from instrumental inertia. In the eye, the pressure of the ocular contents enclosed within the poorly distensible sclerotic damps down this crest. Donders's estimate will probably approximate the conditions in the brachial artery; but one is not justified in applying evidence obtained here to the specialized conditions in the eye. From direct observation of the systolic pressure and of the diastolic, and of the point where the blood column was seen to pulsate in the micropipette at what appeared to be a mean value in my experiments, I consider my estimate a much closer approximation to the truth than that of Donders.

Mr. Kerry further suggests that the pressure in the vitreous should be measured manometrically, and its relation compared with the pressures in the other parts of the eye. I would refer him to the work of Monnik, Priestley Smith, Adamük, Schöler, v. Schultén, Leber, Troncoso, Hölzke, Bödeker, Bellarminoff, Hamburger, Samojloff, and several others. The point at issue is dealt with in my monograph "The Intra-ocular Fluids," 1927, where references to the literature will be found.

I am, etc.,

W. S. DUKE-ELDER.

LONDON, W.

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