

ophthalmoscopic examination on one occasion I observed a sudden diminution in the size of the main trunks of the retinal arteries, with pallor of the disk, followed by dilatation of the vessels and increased vascularity of the parts near the papilla, coinciding with a brief lapse of consciousness. At another time I again saw somewhat similar phenomena, but much less marked.

*Case III.*—A young lady at present under my care suffers from both forms of the disease. Attacks of the *grand mal* recurs monthly, but the *petit mal* is manifested many times daily. As any excitement will develop the latter I have repeatedly observed the ophthalmoscopic appearances which accompany it. These vary with the severity of the attack, which is occasionally the merest sense of vertigo, and at other times complete, though momentary loss of consciousness, with or without local muscular movements of the upper extremities. With the vertiginous sensations, slight but distinct waves of contraction can be seen in the retinal arteries, with temporary fullness of the retinal veins, *followed by collapse of the same, the arteries still remaining small and thread-like.* With the loss of consciousness and local muscular movements there is noticed a short and spasmodic inspiratory movement, accompanied by a gasping sound. With these attacks the intra-ocular changes are most marked, the collapse of both arteries and veins is very apparent. The arteries emptying themselves by a wave of contraction passing from the centre to the periphery, these veins, after a brief but distinct interval of distension, are rendered bloodless by a movement too quick to be appreciated in detail. The vascularity of the disk, at the same moment, is very much diminished. Between the attacks the intra-ocular structures are moderately congested.

Postponing, for the present, any discussion of the various theories of epilepsy, and viewing the phenomena observed in these cases as isolated clinical facts, I would simply call attention to the close connection existing between spasm of the muscular coats of the intra-cranial vessels and loss or impairment of consciousness. These cases show that the ophthalmoscope occasionally reveals similar vascular phenomena in the intra-ocular structures, occurring coincidentally with either form of the disease. The comparative frequency of cases in which these changes can be seen is a matter that can only be determined by a more general employment of the ophthalmoscope in convulsive disorders by the physicians who treat them. Such observations, conducted by different observers, will doubtless be productive of valuable results, and should it be found that the phenomena presented in these three cases can be seen to occur in others, it will not only materially advance our