

Possibly the third or radiating group of ciliary fibres gives to the atrophied set all the assistance needed to carry on the work of focal adjustment under the new conditions until other parts of the muscle are properly developed through exercise. In any event I am firmly convinced from observation of and experience with such cases, that while weakness of accommodative effort is occasionally a serious bar to fully correcting certain refractive errors, its importance has been much over-rated. The ciliary muscle usually adapts itself very readily to displacements, both of the accustomed near and far points, provided other parts of the eye are in their normal state.

Landolt, speaking of the relative amplitude of accommodation and convergence in ametropia, remarks that in myopia the amount of the accommodation remains lower than that of convergence, while hyperopia calls for more convergence, and yet there often exists such a latitude in the relation between the two functions, that binocular vision is realized and maintained with comfort, provided always that innervation and the muscular power are normal.

*Heterophoria*.—This is probably the most common obstacle to the speedy realization of comfortable emmetropia, and a full correction of any considerable retractive error should never be attempted without first estimating the relative strength of the extrinsic ocular muscles.

Where, for example, a patient does not accept a full correction of his myopia or hyperopia, the fault is much more likely to reside in weak external or internal than in any condition whatever of his ciliary muscle. It seems to me that in dealing with the eye muscles we are prone to rely for our information regarding their functions more upon empirical results obtained by the use of phorimeters and other instruments rather than upon calculations deduced from a study of physiological optics. Surely it is more satisfactory and more scientific to have an every-day acquaintance with the relations of the meter-angle of Nagel to the amplitude of accommodation than to possess many measures of heterophoria.

The fact that both convex and concave glasses exert a direct influence upon convergence-efforts led Norton and Savage to lay down certain rules of conduct for dealing with refractive errors in the presence of muscular anomalies. I quote from the latter writer some observations on this subject, based on a study of the relationship between convergence and accommodation.

We have in these studies an attempt to explain why, in a large