

the forehead, when an effort at accommodation is long continued. But this contraction means also contraction of the posterior portion of the muscle, and that in turn is frequently manifested by pain, of which the patient complains, at the back of the head. As we know that in certain individuals the connection between the two portions of this muscle glides over the calvarium very easily, it is but fair to suppose that contraction of the anterior fibres produces also a very decided contraction of the posterior fibres. Indeed, it is only in this way that we can explain the fact that in certain persons the effort to read is accompanied by pain at the back of the head. The patient usually speaks of the base of the brain, although we know, of course, that the brain is not sensitive, and the seat of the sensation must be in the muscle external to the skull. In view of the foregoing, we are apparently warranted in the following conclusions: (1) The pain and headaches which are experienced in the so-called eye strain can be accounted for most rationally as due to excessive muscular contraction. (2) The pain in the eye itself, we are now able to explain, by our more recent knowledge of the process of accommodation, and the tension of the internal recti during convergence. (3) The pain over the eye in the forehead, which is caused by contraction of the fibres of the corrugator supercilii by the anterior portion of the occipito-frontalis, and by other fibres extending over the forehead, which are accessory muscles of accommodation. (4) The pain at the back of the head by contraction of the fibres of the posterior portion of the occipito-frontalis, and the upper fibres of the trapezius when also acting indirectly as accessory muscles of accommodation.

HEPATIC BALLOTTEMENT IN PHYSICAL DIAGNOSIS.*

BY A. L. BENEDICT, A.M., M.D., BUFFALO.

The size of the liver is, on the whole, best estimated by auscultatory percussion, as previously reported. This method is seldom vitiated by intestinal tympany, as is the case with ordinary percussion. Palpation readily detects an enlarged or prolapsed liver. It is always well to check the results of one method by applying another, and the level of the lower margin of the liver, as determined by auscultatory percussion, can usually be cor-

* Presented to New York State Medical Society, January 27th, 1903.