

rica, have demonstrated the fact that a frequent cause of chronic headache is to be found in the mal-adjustment of the eyes.

I would briefly recall to your minds what constitutes hypermetropia. It will be remembered that in this condition the antero-posterior diameter of the eye is too short; consequently parallel rays entering the eye are focused *in front* of the retina. In order to bring them to a focus, a muscular effort of accommodation is necessary. In the higher degrees no effort of accommodation, no matter how great, can accomplish this. Consequently the poor hypermetropic starts life with a deficit and is obliged to draw upon his reserve of nerve force for the purposes of ordinary vision, where emmetropes (normal-eyed persons) use no accommodative effort.

In the case of astigmatism, where the parallel rays entering the eyes are focused differently in the vertical and horizontal meridians, there arises a constant visual perplexity; for while accommodation is adjusted for one part of the object, it is disarranged for another part.

In another class of cases, the extrinsic muscles of the eye do not work together harmoniously. There is a sort of family quarrel among the muscles—one set or more muscles working against the others—with consequent great discomfort to the owner of the warring members. The main difficulty is to maintain binocular vision, in other words, to keep the eyes parallel, so that rays shall be focused in eyes as not to cause double vision. It will thus be seen that the nerve centres are subjected to prolonged irritation, and it is not surprising to learn that they resent this kind of treatment and that the nerves cry aloud with pain, and that the whole head is sick and the heart is faint.

George T. Stevens submits the following proposition:—"Difficulties attending the functions of accommodation and of adjusting the eyes in the act of vision, or of irritations arising from the nerves—involved in these processes—are among the most prolific sources of nervous disturbances, and more frequently than other conditions constitute a neuropathic tendency."

It will be noticed that other causes are not excluded and that it only claimed that mal-adjustment is a *most prolific source* of reflex and functional nervous disorders.

The form of headache most commonly met with

in connection with mal-adjustment of the eyes is characterized by pain in temples in supra-orbital and occipital regions and more rarely on the top of the head. It is paroxysmal, sometimes recurring with comparative regularity, but generally worse after anxiety, care, worry or excitement. In some cases pain is continuous, with occasional exacerbations. Besides pain in the head, there has been found habitual pain at the orifice of the trapezius muscle and at the lower angle of the scapulæ. These pains occur less frequently in men than in women. Men suffer more from occipital pain. Dyspepsia frequently accompanies the headaches, and may be explained on the principle of increased demand upon the nervous energies already exhausted by the ordinary requirements of the system. Insomnia is also a common accompaniment of these headaches.

Stevens goes so far as to state that errors of adjustment can cause epilepsy and chorea. But I am not in possession of facts under my own observation to justify me in going to this length. That headache is very frequently caused by eye defect I think will be admitted, when I state that during the examination of the sight of 4415 children in public schools in this city by Dr Gibb Wishart and myself, we found 408 children who were hypermetropes, and of these 192 admitted to suffering from headache after use of the eyes.

I will not weary you with any details of cases, but say that my object in preparing this paper is to simply draw renewed attention to the fact that errors of refraction and want of balance of the muscles of the eyes are prolific sources of headache and neurasthenia, and to suggest that in all cases of chronic headache the refraction should be tested and the muscular indices be determined, in order that the patient may be afforded every chance of escape from his ills.

ERGOT IN THE TREATMENT OF PNEUMONIA, WITH NOTES OF A CASE.

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Mr. W., a gentleman aged 39, of a florid complexion, weighing 240 pounds, was first seen at noon Jan. 8th, the second day of his illness. He was recovering from la grippe and had had pneumonia some years previously.