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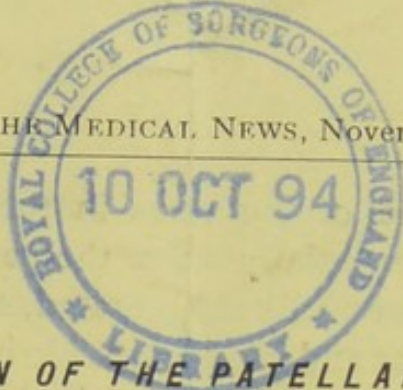
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**THE RELATION OF THE PATELLAR TENDON-REFLEX TO SOME OF THE OCULAR REFLEXES FOUND IN GENERAL PARALYSIS OF THE INSANE.<sup>1</sup>**

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THE following observations are given as expressive of some of the most important and most certain of the findings that have been obtained in a clinical study of the ocular symptoms of general paralysis of the insane as observed in a large proportion of the male inmates of the State Hospital for the Insane at Norristown, Pa. Although tentative in a measure, and not to be found to equal degrees in each individual case, yet, by reason of a combination of a large series of similarly related groupings, these observations may be justly offered as showing the relationship existing between the patellar tendon-reflexes and the ocular reflexes in this disease.

With such provisions, and with the hope that these studies may serve as inducements to others for similar research, the following formulations are herewith offered :

<sup>1</sup> Read before the American Ophthalmological Society, July, 1893.

1. In some of the cases in the second stage of the disease, especially when the patellar tendon-reflexes were unequally exaggerated, there appeared to be an irregular and unequal spastic innervation of the two irides, causing irregularities in pin-point pupil-forms.

2. In a few cases, especially in the third stage of the disorder, when the patellar-tendon reflexes were unequally diminished, and the pupil size was small and the pupillary shape somewhat irregular, the iris seemed to be but little acted upon by any powerful mydriatic.<sup>1</sup>

3. In many cases, especially in comparatively young subjects in the third stage of the disease, when the patellar tendon-reflexes were unequally diminished, there appeared to be an unequal paralytic innervation of the two irides; the pupillary dilatation manifesting itself at times, though not as a rule, in the eye with the greater amount of objective optic-nerve-head degeneration and retinal change.

4. In a few cases (especially in men of middle life) in the third stage of the disorder, when the patellar tendon-reflexes were markedly diminished and when the ataxias were quite pronounced, there were marked temporary asymmetries of pupillary form, one pupil often being quite small and irregular for several examinations, whilst its fellow was large and ovoid or oval.

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<sup>1</sup> In several such cases there were marked depressant effects, with grave constitutional symptoms, produced by single instillations of  $\frac{1}{40}$  and  $\frac{1}{20}$  grain of neutral sulfate of atropin in the conjunctival cul-de-sacs.

5. In quite a number of cases, especially in the advanced stages of the disease, when the patellar tendon-reflexes were either unequally exaggerated or diminished, there was a failure of the irides to respond to even major degrees of light-stimulus; this being true not only for those subjects exhibiting a true spastic myosis, but more especially shown in those instances in which, with partial dilatation of the pupil, mydriatics failed to act.

6. In many instances, especially in the older cases, when the patellar tendon-reflexes were, as a rule, unequally diminished or even lost, there was not only failure of iris-response to the strongest light-stimulus carefully thrown upon the retina, but when obtainable, the irides seemed to fail to react to the various coarse and rough subjective and objective procedures necessary to be used in order to evolve both separated and associated efforts for accommodation, and associated efforts for convergence.

7. In some instances in which ciliary muscle-innervation could be satisfactorily obtained, both the spastic excitation and the paralytic innervation at times found by subjective reading-tests and objective study with the retinoscope seemed to be in direct ratio to the patellar tendon-reflexes as the iridic changes.

8. In quite a number of cases in which there was marked inequality of the pupils, with more or less want of reaction of the irides to light-stimulus, the patellar tendon-reflex on the side of the larger pupil seemed to be the one the more greatly diminished.

9. In a number of instances, especially during

the very earliest stages of the disease, when the patellar tendon-reflexes were beginning to lessen to unequal degrees, there often appeared momentary secondary ataxic dilatation of the pupil during exposure to strong light-stimulation.

10. In many cases, especially during the second stage of the disorder, when the patellar tendon-reflexes began to become irregular and inconstant, pupillary inequalities as expressive of unequal iris-innervation and action became more and more constant.