

feeling of utter powerlessness, the stiffly-advanced limbs would be affected with a cramp of unusual severity, which took longer than usual to wear off and, should he, by fixing the arms and initiating new contractions too rapidly or forcibly, overdo things, he would be sure to trip and fall prone. The writer regards this subjective and fleeting sensation of absolute loss of power succeeding the moment of willing as representing the subject's actual appreciation of the *delay in the latent period*, which some observers state does not occur. This is a point of some interest in connexion with the view generally held as to the nature of Thomsen's disease.

(d) *Cold*. This definitely aggravates the condition in the writer's case. Dry warmth seems to help "limber up" the muscles. This cause is much less efficient than the preceding.

(e) *Small doses of alcohol* undoubtedly diminish the severity of the cramps for the time being—possibly owing to the effect of alcohol on the inhibitory mechanism.

(f) *Fatigue* is a moderately effective factor. After any excessive muscular exertion there is marked stiffness and some soreness of the muscles. The abnormal functioning of the muscles may result in the production of an excessive amount of the bye products of metabolism, thus aggravating the spasm. It is usually stated that the *muscular strength* is not in proportion to the bulk of the muscles. Observation of the writer's case would indicate that this is an error, since from early schooldays the patient has been regarded as unusually strong (muscularly) for his size and weight. The hand-grip, for instance, is very severe, but owing to tardy contractions its maximum intensity is only slowly attained, and *fatigue ensues more rapidly than normal*. The statements as to the power of the muscles seem to depend, the writer thinks, on a failure to recognize this premature onset of fatigue which the patient himself best appreciates, and which seems out of proportion to the efforts made.

It should be added, that the tonic spasms are entirely painless as a rule, and it is only when successive contractions are rapidly and powerfully initiated before anything like complete relaxation of the preceding ones has occurred, that the muscles become "tied-up," and a marked sense of discomfort amounting, though rarely, to pain or even a "sprain" of the muscle may result. *Passive* movements are free. The superficial, deep and organic reflexes all appear normal. The knee-jerk is slightly exaggerated perhaps. The patient *sweats profusely* under rather slight causes, especially about the head and neck. This has been noted in other reported cases.