

indicating the indirect contraction by the *reflex* excitation of tension. G.'s account of the knee-phenomenon would thus include both its leading theories, viz., that of direct irritation and that of reflex excitation. For the front-tap contraction (a name given by G. to the gastrocnemius contraction, following a sharp tap on the anterior leg muscles), he finds an interval of $\cdot 04$ to $\cdot 05$, and concludes that the contraction is one of *direct* irritation. The ankle-clonus is regarded by G. as due to the direct stimulation of a muscular irritability, constituted by the reflex effect of tension, its frequency being 6 to 8 per sec., while the rare knee-clonus is regarded as reflex in mechanism, its frequency being 2.5 per sec. He considers clonus as an instance of a rhythmic action effected by a continuous stimulation.

NOTE.—In the course of measurements, which will be detailed elsewhere, of the interval between percussion and contraction, I found for the knee phenomenon $\cdot 04''$ as its mean value in normal subjects (Gowers, $\cdot 09''$ to $\cdot 15''$; Tschiriew, $\cdot 033''$). For the front-tap interval I found $\cdot 035''$, $\cdot 04''$, and $\cdot 04''$ in three cases where the knee interval was measured to be $\cdot 035''$, $\cdot 04''$, and $\cdot 045''$ (Gowers, $\cdot 04''$ to $\cdot 05''$). In two other cases (paraplegia) I found for the ankle-clonus a spasm frequency of 8 and 9 per sec., and for the knee-clonus of 9 and 10 per sec.

I may remark that a knee clonus does not seem to be so rare as it is usually stated to be. *A priori* we should not expect a rectus-clonus to be more unusual than a gastrocnemius-clonus, and it is simply owing to the respective circumstances of the two joints, that the spasms can commonly be elicited single in the rectus, multiple in the gastrocnemius. In point of fact a knee-clonus may be elicited by appropriate measures even in normal subjects, which is to the pathological phenomenon what the foot-trepidation of a normal subject is to its exaggeration—ankle-clonus. I have found the knee-clonus in the ankle-clonus cases I have examined by a flexing jerk of the rigidly-extended limb (best in the rigidity of paraplegics, where there remained some degree of voluntary motility).

The identity in the time-intervals of the single spasms at the two joints argues them to be of identical mechanism; the identity in the spasm-frequencies argues these also to be of identical mechanism. By other considerations that cannot be entered upon here, I am led to the conclusion that *all* the spasms above referred to are reflex from the spinal cord.

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Primary Athetosis. GNAUCK. (*Arch. f. Psych.*, ix. p. 300.)
—A girl, aged 13, who had always been healthy and had no predisposition to nervous disease, was seized with smarting pains in the right face. In eight days, continuous involuntary movements of the right hand and foot were observed, and shortly afterwards slight drooping of the right side of the face. Treatment with bromide of potassium was followed by disappearance first of the facial pains and then of the involuntary movements, these last

being completely gone in three months. The drooping of the face became less noticeable, but did not disappear. She remained well about three months, when her old symptoms reappeared. She noticed now that in certain places her sense of touch was not as acute on the right as on the left side. The facial pains ceased after an attack of epistaxis, but the other symptoms persisted. In this condition she consulted the author, who noted movements in the fingers, hand, forearm, toes, foot, and leg of the right side. The movements were slow, rhythmical, unceasing, involuntary, and yet, as it were, purposive, and they ceased during sleep. There was facial hypokinesia on the right side. The cutaneous sensibility was somewhat diminished in the parts in which the movements occurred. But there was no loss of power in the right extremities; the electric irritability was unchanged; the reflex excitability, including the phenomenon of tendon-reflex, was normal, and the circumference of the limbs was the same on both sides. Bromide of potassium was given in increasing doses, and the continuous current, from the cervical and lumbar regions of the cord downwards to the affected muscles, was applied every other day for about ten minutes. In a few months the patient had completely recovered.

The important points in this case are (1) the fact that the disease occurred in an individual who had previously enjoyed good health; (2) the partial recovery and subsequent relapse; and (3) the ultimate complete recovery of the patient. The case is one of idiopathic or primary athetosis, as distinguished from secondary or symptomatic athetosis, in which we have a history of hemiplegia, epilepsy, brain atrophy, &c. Of the primary disease only five cases are on record, and Gnauck gives a comparative analysis of them. In the only instance in which an autopsy was made, a focus of softening was found in the 'corpus striatum and lenticular nucleus' of one side. In the case just reported there was probably an affection of the outer part of the left half of the pons. The author distinguishes between symptomatic athetosis and cases of athetoid movements: in the former, the symptoms very closely resemble those of primary athetosis, in the latter, they differ from these in some important respects.

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A Case confirming Cerebral Localisation. DR. TAMBURINI (*Rivista Sperimentale di Freniatria, Anno V. Fascicolo III.*) gives an account of an imbecile, 45 years old, bearing the honoured name of Paul Veronesi. He was subject to epileptic fits, which were often