unaltered. Electrical examination showed no myasthenic reaction or reaction of degeneration. Apart from the tinnitus there was no sensory disturbance. Pulse 90. Arterial pressure raised (20–12 Pachon). Treated with pituitary and suprarenal extracts he improved, until the tenth month, when there was a return of ptosis and diplopia, with defect of speech-articulation, difficulty in raising the upper lip, and weakness of the palate; fluids came back through the nose. The tendon reflexes were now exaggerated. Pulse 104. Pressure 14–9. Headache, depression, and delusions of persecution were absent. Breathing became increasingly laborious, and the patient died, 11 months after the onset of the illness.

Post-mortem examination revealed a tumour of the thymus, the size of a duck's egg (primary epithelioma). The four parathyroids were enlarged, each being as big as a large pea: they contained much colloid and many eosinophile cells, indicating a functional hyperactivity. Pituitary lesions (increase of volume and of pigment) were confined to the posterior lobe. The suprarenals were well developed; combined weight, 20 grm. In the nuclei of the pons and medulla there were fine cell-changes of doubtful significance. SYDNEY J. COLE.

(1) *Inscriptions of Speech.* (*Volta Rev.*, *July*, 1920.)
(2) *Ataxia, Asaphia and Apraxia in Speech.* (*Journ. Neurol. and Psychopathol.*, *August*, 1920.)
(3) *The Nature of Epilepsy.* (*Proc. Roy. Soc. Med.*, 1920, *vol. xiii* (*Psych. Sect.*), *pp.* 18–23.) *Scripture, E. W.*

In his address at Cambridge in July last Dr. Henry Head said that disorder of articulation was one of the earliest manifestations of nervous disease, though it frequently passed unnoticed by those in contact with the patient. Fortunately the emotional effect produced by the physician's interview sometimes enabled the latter to discover the defect in the speech.

It is interesting to find that Dr. Scripture has brought forward a method by which he is able to detect disturbances of speech, although some of the cases showed no voice change that could be discovered by the patient or anyone else. The patient speaks into a wide tube ending in a flexible membrane. The vibrations and puffs of air passing down the tube cause the membrane to move, and these movements are recorded by means of a light lever on the smoked surface of a revolving drum. Ordinary voice sounds, as shown by the inscription, are composed of puffs or breaths of air, of interruptions of the air-current, and of vibrations.

Normal speech depends upon the integrity not only of various muscles, but also of the motor and sensory innervation and of the centres concerned. Impairment of any of these is liable to cause disorder of speech and to modify the voice inscriptions. Thus it was found that a single syllable like "pa," spoken respectively by cases of muscular dystrophy, bulbar paralysis, disseminated sclerosis and neurasthenia, produced inscriptions readily distinguishable not only from that of the normal voice but also from each other.

The sudden jerks and irregularities that are observed in the inscrip-

https://doi.org/10.1192/bjp.67.276.77 Published online by Cambridge University Press

tion of a case of disseminated sclerosis are caused by the intention-tremor of the crico-thyroid muscle (innervation ataxia). The want of control of single muscles (ataxia) is in contrast with the want of control of constant types of movement (asaphia): in an inscription by a paretic who was asked to repeat "Peter Piper's peppers" the occlusions for the "p" varied considerably in length and the explosions differed in strength. The irregularity was in the agreement of the type of the sound to be regarded as a correct "p." In "apraxia" there is a loss of control of complex movements: "the praxic centres prescribe whole words, phrases and expressions in speech."

The author has also made a special study of the inscriptions of speech in many cases of epilepsy. To the ordinary eye no difference from that produced by the normal voice could be seen; when, however, measurements were taken with a micrometer microscope certain peculiarities were discovered.

To quote the author: "The vowels and vibrating consonants appear in the inscriptions as series of fine waves. The length of each wave is measured, and the results are plotted on cross-section paper. A long wave is the registration of a low tone of the voice and a short wave of a high tone. A line drawn through the series of dots thus gives the rise and fall of the voice, or the melody of the words spoken. It is termed the *melody plot.*

"The melody plots for normal speech show that the voice is continually rising and falling; it is never steady on the same pitch for an instant. This is quite independent of the general melody of the phrase; whether the person speaks with rising or falling inflection, or with great or little modulation of the general melody, he also shows this finer fluctuation or flexibility of melody.

"The melody plots for epileptic speech, however, show a diminution or an absence of the finer fluctuations. The melody lacks flexibility. To the ear the speech sounds expressionless or wooden. With little difficulty the ear can be trained to detect this peculiarity."

This inflexibility of melody observed in the epileptic is in marked contrast with the over-flexibility noted in cases of hysteria, and the phenomenon may be found useful in differential diagnosis. It is a known fact that it is not always easy to distinguish between the epileptic and the hysterical fit. Thus it would appear that the inflexibility of melody is more to be relied upon than the actual fit in making a diagnosis between the two conditions.

Scripture finds that the new view of epilepsy put forward by Pierce Clark is quite in accord with his own observations on the speech in epileptics. According to Clark epilepsy is essentially a disease of character, the predominant feature being inflexibility of temperament with a failure of adaptation to the environment. Even the convulsive attack is a reaction away from the stress of reality—the patient withdrawing himself from a too-demanding environment by a temporary lapse into unconsciousness. According to this theory the inflexibility of melody, so remarkable in the epileptic, would be an outward expression of the epileptic's attitude towards his environment.

NORMAN R. PHILLIPS.

https://doi.org/10.1192/bjp.67.276.77 Published online by Cambridge University Press