often looked upon as the cutaneous expression of some nerve disease, but here we have a case in which symmetrical gangrene was superadded to it, and if the one condition find a real cause for its origin and progress in peripheral neuritis, it seems more than probable that the cause of the other condition lies also in the same morbid process.

HERBERT W. PAGE.

Anatomo-Clinical Researches on Bilateral Sclerosis consecutive to Unilateral Lesions of the Brain. PITRES (*Archives de Physiologie*, Feb. 15, 1884, p. 142).

A series of ten cases of hemiplegia is given, in which there was found, post-mortem, an *unilateral* lesion of the cerebrum with descending sclerosis in *both* lateral columns of the cord.

a. The duration of the cerebral lesion varied from five months to six years; the position was—twice in the cortex (motor area), seven times in the central part of the brain (especially middle part of internal capsule), once both the cortex and the central part was involved. The lesions were sometimes on the right, sometimes on the left side. Their character was—seven times old hæmorrhage, three times yellow softening (generally of moderate extent). There was therefore nothing special in their character or position to account for the peculiar bilateral degeneration of the cord.

β. At the level of the peduncles, pons, and medulla, there was the usual degeneration of the pyramidal tract, viz. on one side only, the same side as the cerebral lesion.

γ. From the level of the decussation of the pyramids downwards, there was degeneration in *both* lateral columns of the cord. In four cases the lateral column of the hemiplegic side (side opposite the cerebral lesion) was more markedly degenerated than that of the sound side. Upon the hemiplegic side there was what the author calls "massive sclerosis," i.e. dense fibroid tissue with scanty nuclei, permeated by thick-walled vessels, and containing very few nerve fibres; upon the other side the sclerosis was "reticulated," i.e. the fibroid tissue formed meshes of variable size, containing from one to twelve healthy fibres.

In six cases the degeneration was symmetrical. In these cases the area of degeneration extended further forwards than the usual area of the crossed pyramidal tract, and the degeneration itself was less dense and massive than is usual in unilateral descending degeneration.

The cerebellar tracts were unaffected.

The columns of Türck (direct pyramidal tracts) were normal in four cases, and in six slightly altered. There appeared to be no relation between the sclerosis of the columns of Türck and that of the lateral columns; thus in the six cases of symmetrical bilateral sclerosis, Türck's columns were twice symmetrically sclerosed, twice unequally sclerosed, once sclerosed on one side only: while in the four cases of asymmetrical bilateral sclerosis, Türck's columns were once healthy, once sclerosed on one side only, and that on the same side as the most marked lateral sclerosis (hemiplegic side).

Rest of white substance and grey substance was practically normal.

This bilateral descending sclerosis may be more frequent than is generally thought, for in forty cases of old hemiplegia, Pitres has met with ten examples of it.

Possible explanations:

(α) Charcot's hypothesis, that as the crossed pyramidal tract passes down the cord, it undergoes a second decussation, fibres passing from it through the anterior commissure to the corresponding tract of the opposite side.

But in the first place, Pitres could find no degeneration in the anterior commissure; and secondly, the bilateral sclerosis was developed, not gradually as the sections passed down the cord, but suddenly at the level of the decussation of the pyramidal tracts.

(β) That at the region of their decussation, where the two pyramidal tracts are in close anatomical relation to each other, a diffusion of the lesion takes place from the diseased to the healthy tract, giving rise to secondary descending degeneration in the latter.

Pitres inclines, on theoretical grounds, to reject this hypothesis, and he could find no anatomical evidence for it.

(γ) The author's own hypothesis is as follows:

That in addition to the variations which are at present known in the decussation of the pyramids, viz. that each pyramidal tract may at the decussation pass either wholly into the crossed pyramidal tract of the cord, or partly into this, partly into the direct pyramidal tract, and in a variable proportion into either, another variation is possible, viz. the pyramidal tract may here pass partly into the pyramidal tract of the *opposite lateral column*, partly into that of the *lateral column of the same side*.

As regards the symptomatology.

Diminution of gross muscular force on the non-paralysed side is

too common an occurrence in hemiplegia to be connected with this bilateral sclerosis.

Bilateral exaggeration of tendon-reflex does not necessarily accompany the bilateral sclerosis, and may occur independently of it. This the author's observations, here and elsewhere, show.

Double ankle-clonus has not as yet been shown, anatomically, to be connected with it.

Contracture of both lower limbs only occurred twice in the ten cases; and in one case (elsewhere published) of double contracture there was only unilateral sclerosis.

These facts are certainly not what we should expect, but we must remember that the spastic phenomena are only *indirectly* connected with lateral sclerosis: being due probably to the irritation of the anterior cornual cells set up by the lateral sclerosis.

The only symptom which Pitres thinks can be as yet connected with the double lateral degeneration, is a certain loss of equilibrium, a difficulty in standing and walking, which is experienced by some hemiplegics, who so far as the muscular power of the paralysed leg is concerned ought to be able to walk well. It is, he thinks, a want of co-ordinating power for the complex muscular movements required for these acts, which need the combined action of the muscles on both sides of the body.

On the relations between Ankle-clonus and Knee-jerk. FLEURY (*Revue de Médecine*, August 1884, p. 656).—The author finds that the patellar tendon-reflexes are not always exaggerated in cases where ankle-clonus is present. In five cases observed by him there was ankle-clonus, but the patellar tendon-reflexes were normal. In three others, there was ankle clonus, but the patellar tendon-reflexes were feeble or absent. Further, in five cases of nervous disease where there was both exaggeration of patellar tendon-reflex and ankle-clonus, he found that by applying Esmarck's bandage the ankle-clonus could be removed without modifying the patellar tendon-reflex; hence the two phenomena cannot depend on the same cause.

J. A. ORMEROD, M.D.