Abstracts.

Neurology.

PHYSIOLOGY.


The author points out how Head and Sherren's division of sensibility into epicritic, protopathic, and deep has been criticized; but considers that on the whole their views have stood the test of time in respect of their theory of dissociation, though not in their classification. He considers that the fundamental thing in protopathic sensibility is the unlocalized, unmeasurable, uncontrolled hurt or affective element, as opposed to the introspective, measurable, more or less well-defined sensation of sharpness or pointedness, and of warmth and cold, each of which must be classed with the critical elements. He points out that in syringomyelia and thalamic dissociation the critical pathways, both superficial and deep, retain their anatomical and functional individuality all the way from the periphery to the thalamus, thus disposing of Head's hypothesis of re-grouping in the spinal cord. The author regards protopathic sensibility as undifferentiated affective 'hurt', and considers any differentiation involves the presence of epicritic elements in the sensation. In peripheral-nerve lesions epicritic sensation is abolished, while in spinal lesions protopathic affective sensation is abolished, as in, e.g., syringomyelia. It sometimes happens that the reverse of this is observed, so that there are evidently separate paths both peripherally and centrally for the two types of sensation—the protopathic path having its main terminus in the thalamus, and the critical in the cortex, and each set may be divided into superficial and deep forms. The author insists on the value of introspective analysis of the sensation; thus, in testing warmth by the usual method in a normal area the first sensation noticed is touch, then warmth, then 'hurt', which is overshadowed and controlled by the other two; whereas in an area whose nerve-supply was injured the 'hurt' would overshadow the others. He describes this graphically thus:

<table>
<thead>
<tr>
<th>Sensation</th>
<th>Normal Area</th>
<th>Affected Area</th>
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<tbody>
<tr>
<td>Touch</td>
<td>-</td>
<td>+ +</td>
</tr>
<tr>
<td>Warmth</td>
<td>-</td>
<td>+ +</td>
</tr>
<tr>
<td>Hurt</td>
<td>-</td>
<td>+ + +</td>
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and so for other sensations.
It must be remembered that in any case of dissociation of sensibility one of the elements preponderates, but is not present to the exclusion of the other. The author suggests the following tests for eliciting his four forms of sensibility: cotton-wool touch for ‘superficial critical’; pin-pricking for ‘superficial affective’; posture for ‘deep critical’; pinching for ‘deep affective’. He suggests that the use of these, in conjunction with the introspective analysis recorded as above, will give all the information required about sensation.

R. G. GORDON.

[71] The physiopathology of tickling (Sulla fisiopatologia del solletico).

Owing to the supposed variability of this phenomenon it has not received much attention. The author carried out observations on normal individuals and on those suffering from a variety of pathological conditions. Superficial tickling is induced by light touch and lasts some time after removal of the stimulus, but is immediately stopped by pressure. It is difficult to define the sensation, but it is most closely allied to itching. It may be produced by the subject himself. Superficial and deep ticklishness are two separate phenomena. Deep tickling involves complex nervous arcs, and is of the nature of a reflex action involving a definite psychical process. As a rule it cannot be produced by the subject himself. Tickling of the soles of the feet should be considered as belonging to the class of deep tickling. Taking abdominal ticklishness as an example, the author found that the excitability of the abdominal reflex and the ticklishness corresponded, and that the point of reception of stimulus was not the skin but the muscles. The two, however, are not identical, for in some parts of the body reflex muscular action is found without ticklishness, and in others ticklishness without reflex muscular action. The areas of most marked ticklishness are those where there are large aponeuroses or insertions of large tendons, and the author seeks to identify ticklishness with the special sensations belonging to tendons. The receptive end-organ of the tickling ‘engram’ is situated in the tendon aponeurosis or periosteum, and not in skin or muscle. The author then notes the affective accompaniments of tickling, and reviewing the observations on the double innervation of muscles (motor and static or vegetative), concludes that tickling is a ‘sympathetic reflex’. He quotes certain of his observations on patients to show that variations occur in the reactions to tickling which correspond to interference with the functions of the basal nuclei and alterations in the affective reactions generally. Under ordinary circumstances tickling is associated with laughing, and if persisted in too violently this will turn to crying. Accompanying these states intense ‘sympathetic’ activity is to be observed; in pathological cases crying may be the first reaction. The laughing of tickling is not the controlled phenomenon of ordinary psychical laughter, but an explosion almost epileptic in character. The author concludes that the ‘centre’ for the phenomenon of tickling is in the basal ganglia and near the ‘centres’ for laughing and crying. Evidence for the bilateral position of this, probably in the caudate nucleus and putamen, is adduced.
NEUROLOGY

The author next seeks to draw an analogy between the reflex of tickling and the hysterical attack and other phenomena of hysteria. He regards tickling as perhaps the only remaining phenomenon of primordial non-differentiated emotivity, and thinks that in hysteria there is a dissociation liberating similar undifferentiated emotivities, and that the 'pathology' of hysteria may be found to be in a failure of function of the basal ganglia. He does not think that the phylogenetic significance of tickling is teleological, but that it is an expression of primary undifferentiated emotivity to which utilitarian objectives have been added secondarily (defence, eroticism, play, and strife).

R. G. GORDON.

PATHOLOGY.

[72] Review of the actual findings in the pathological anatomy of the nervous system in dementia praecox (I dati attuali sull'anatomia patologica del sistema nervoso dei dementi precoci).—

New findings as to the distribution and genesis of the 'patches of disintegration in the form of bunches of grapes' in dementia praecox (Nuovi dati sulla distribuzione e sulla genesi delle 'zolle di disintegrazione a grappolo' dei dementi precoci).
—V. M. Buscaino. Ibid., 57.

The author reviews the reports of about 550 autopsies and concludes as follows: (1) In many cases of dementia praecox a predisposition or constitutional abnormality of the central nervous system is anatomically demonstrable. (2) It cannot be asserted that the disease depends on infection from the appearance of the meninges, the vessels, or the cerebral parenchyma. (3) The lesions found are of a degenerative nature. (4) In the cerebral cortex the layers specially affected are the 6th, 5th, and 3rd. The lesions of the various layers do not throw light on the dissociative phenomena of dementia praecox, probably because its fundamental pathological anatomy has not yet been described. (5) The finding of lesions in the corpora striata may be of considerable importance in connection with the genesis of muscular hypertension in catatonic cases. (6) Not uncommonly important lesions are found in the grey matter of the medulla, spinal cord, and sympathetic ganglia which may be of significance in connection with the vegetative disturbances in the disease.

The author considers that the most important changes are the patches of disintegration 'a grappolo' (like bunches of grapes); these are met with in three varieties, whose histological properties he describes, and occur frequently in cases of dementia praecox, but rarely in such conditions as G.P.I., epileptic dementia, etc. They are found chiefly in the white matter of the cortex, less commonly in the basal ganglia, and rarely in the grey matter of the cerebrum or cerebellum. In catatonic dementia praecox the patches are chiefly in the corpus striatum and globus pallidus.

Lesions occur frequently in the dentate nucleus, the olives, etc., and the author thinks these may be associated with cataleptic manifestations. In certain cases with changes in the reflexes corresponding changes have