
The conclusions reached by the authors are as follows:

1. Intense auditory stimuli increase blood-pressure—mainly the systolic pressure.
2. They act independently of the associated emotional and painful factors.
3. The stimuli probably act on the blood-pressure by way of extracochlear fibres.
4. This phenomenon cannot therefore be utilized as a test of cochlear excitability.

NEUROPATHOLOGY.

The Kahn reaction with spinal fluid.—R. L. Kahn and Elizabeth McDermott. Amer. Jour. of Syphilis, 1929, xiii, 557.

The Kahn reaction applied to serum in the diagnosis of syphilis has been satisfactory in the hands of most workers. The test applied to the cerebrospinal fluid has, however, been attended with certain difficulties in technique, which render the test less valuable than it might be. The present writers have undertaken the task of minimising the sources of error in the test by certain modifications of the original. Two steps in the procedure have been altered:

(1) the percentage of saturation, and (2) the sensitization of antigen. It was already recognised by Kendrick and Kahn that the total globulin obtained by saturating the fluid to 50 per cent. with ammonium sulphate gave more sensitive reactions than the portion of globulin obtained by 40 per cent. saturation. It is known that the sensitiveness of antigen is greater when mixed with saline indicated by the titer, than when mixed with saline in excess of the titer.

These two possibilities for increasing the sensitiveness of the reaction with cerebrospinal fluid have been tested by the present writers, and their results summarised. Promising results have already been obtained in serum using sensitised antigen—the so-called ‘presumptive procedure’—the sensitiveness being especially marked in cases undergoing treatment, and also valuable in detecting untreated cases.

Six sets of experiments were done:

(1) Using 40 per cent. and 50 per cent. ammonium sulphate.—This experiment included 311 tests, and showed a result in favour of the 50 per cent. saturation.

(2) Using varying antigen.—A series of tests was done using 50 per cent. saturation with 1+1.1 antigen, and using 40 per cent. saturation with an antigen of 1+1.3. The results were definitely in favour of the former.
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(3) Using 40 per cent. saturation with standard antigen, and 50 per cent, with sensitised antigen.—297 tests were done. The results showed increased sensitiveness with 'sensitised' over 'standard' antigen.

(4) Using 50 per cent. with 'standard' and with 'sensitised' antigen.—The results showed 12 per cent. more positives with sensitised than with standard antigen.

(5) Using increased concentration of globulin, 20 times instead of 10 times, with standard and with sensitised antigen.

(6) Using increased concentration with sensitised antigen only (447 cases).—The result was a marked increase of sensitiveness with globulin solution solution of 20 times concentration, at any rate with weaker fluids, but with strongly positive fluids the weaker concentration gave better results. The final conclusion reached is, however, against the substitution of 20 for 10 times concentration.

From these experiments the authors conclude that the Kahn test, in which the standard antigen is employed, is more sensitive when carried out with the total globulin obtained by the 50 per cent. saturation with ammonium sulphate. This method, however, is not free from falsely negative reactions. The 'presumptive Kahn test' with spinal fluid in which sensitised antigen is employed, is considerably more sensitive than the regular test.

E. O'F.


The term 'presumptive' is used by the author to emphasize the fact that, until clinical studies established the value of the test, its results must be accepted guardedly. This differs from the regular test in that a small amount of ether-soluble-alcohol-soluble lipoid is added to the ether-insoluble-alcohol-soluble lipoid which is used in the regular test.

The number of cases examined was 473. Of these, 115 were undiagnosed and untreated, and 359 were treated cases.

Results.—In 100 of the first group, there was complete agreement with this test: 30 positive, 70 negative. There was disagreement in 15 cases. Of the second group of treated cases, 243 cases requiring further treatment gave positive results; 41 cases requiring no further treatment gave negative results; and 23 showing no evidence of cerebrospinal syphilis gave negative results.

Discrepancies.—Forty-six positive reactions were obtained in 23 patients who were clinically free from symptoms—the regular Kahn reaction being negative. Four negative results were obtained in 3 patients who should have further therapy.

The 43 cases giving positive 'presumptive,' but negative regular Kahn reactions, were cases of primary, secondary, latent and late syphilis; the first suggesting a very early meningeal involvement, the last suggesting that an
invasion by the spirochaete had occurred previously, the small residue of which gives rise to a positive 'presumptive' test. The final conclusion is that the 'presumptive Kahn test' is highly sensitive; thus it is a check on the regular Kahn reaction and stimulates more careful clinical examination.

With regard to the positive results obtained in syphilitic cases in the absence of clinical evidence of neurosyphilis, judgement must be withheld for the present.

E. O'F.

[202] The clinical value of the Kahn Test with spinal fluids.—K. M. Davenport. Amer. Jour. of Syphilis, 1929, xiii, 570.

Most reports on the Kahn test have been done with the object of deciding its value relative to other tests for syphilis. Davenport compares his chemical results with clinical findings, and bases his results on the study of 487 cases examined with the regular Kahn test (standard antigen and cerebrospinal fluid concentrated to ten times by means of 50 per cent. saturation with ammonium sulphate).

Two classes of cases were investigated:

(1) Those diagnosed as syphilis.

(2) Those which had received antisyphilitic treatment.

Of 118 cases sent for diagnosis, 27 were diagnosed as neurosyphilis, and gave positive results; 84 cases clinically free from neurosyphilis gave negative results; 5 cases of neurosyphilis gave negative results. Three hundred and sixty-nine examinations were made on treated cases: 227 positive results were obtained in cases requiring further treatment; 65 negative results on patients free from neurosyphilis, and 40 negative results on patients not requiring further treatment. Thirty-seven negative results were obtained in cases requiring further treatment.

In all, 487 tests were done. In one group of 118 untreated cases, 27 positive and 84 negative reactions were in agreement with clinical findings. Five negative reactions were found in cases of neurosyphilis. In the second group of 369 treated cases, 227 positive and 105 negative reactions corresponded to clinical findings. Thirty-seven negative reactions were obtained on 23 patients treated for neurosyphilis and needing further treatment.

E. O'F.


In 587 patients with various nervous diseases the sigma reaction of Dreyer and Ward was found to be rather more sensitive than the Wassermann reaction
with heart extract, and as sensitive as that with syphilitic extract. The cerebrospinal fluid gave similar results with the sigma and the Wassermann reaction. The former reaction was usually positive in neurosyphilitic cases when others (such as the cell, albumen and globulin reactions) were positive. It is noteworthy that of nineteen cases of neurosyphilis with negative spinal fluids six were cases of tabes dorsalis. Exact figures are however not given by which the reactions in the cerebrospinal fluid might be compared with one another, and the paper therefore does not disprove the general impression that the sigma reaction is less satisfactory than the Wassermann reaction for use with the fluid.

J. G. G.

The author has studied the reaction with a colloidal mixture of mercuric chloride and basic fuchsine proposed by Takata and Ara. While confirming the positive results given by the reaction in neurosyphilis and the negative reactions with normal fluids claimed by the Japanese authors, he obtained positive reactions of the metasyphilitic type (comparable to those in general paralysis) from cases of meningitis and sometimes in disseminated sclerosis, abscess of the brain, and compression of the cord. Reactions of the meningitic type were given by cases of compression of the spinal cord and by one case of cerebral tumour. The author found the reaction less sensitive than the colloidal benzoin reaction in disseminated sclerosis.

J. G. G.

The authors describe four cases of meningioma arising from the olfactory groove, and point out the various sites of predilection on the base, where arachnoid and dura come together, at which this particular type of neoplasm is apt to develop. They also examine the semiology of the olfactory group, and their differential diagnosis. No clinical novelty emerges therefrom.

J. V.

An unusual macroscopical change was seen in five brain cases, viz., relatively small splits along the convexity of certain convolutions, parallel to the course
of the gyri. The microscope revealed the presence of a funnel- or crater-like depression, its point downwards and reaching the white matter, in which by Nissl colouration the layers of cortical cells were shown to have lost their staining capacity. In accordance with this change in the parenchyma the glia formed a rich cicatrix of fibrils; at the same time loss of myelin sheaths was noted in nerve-fibres of the part affected, and a new formation of others. The whole formed a condition analogous to the 'plaques fibromyeliniques' described by the Vogts. These alterations are not developmental anomalies but the end-result of a process of disintegration, and are to be distinguished from both cortical change secondary to arteriosclerosis of pial vessels and 'granular atrophy' of the cortex consecutive to the same vascular process. A traumatic origin for the splitting is not excluded. 'Plaques fibromyeliniques' can be regarded as attempts at regeneration.

S. A. K. W.


The author reports two cases in which a colloid-containing cyst in the third ventricle of the brain caused hydrocephalus by blocking the upper end of the iter of Sylvius. The appearance of the cysts was identical with that described by Kinnier Wilson in 1906. Drennan found that they arose from the choroid plexus and are analogous to the cystic distensions of the plexus which frequently occur in the lateral ventricles in elderly and insane patients.

J. G. G.


In this paper are described three cases of 'spontaneous subarachnoid haemorrhage' due to rupture of sacular aneurysms upon branches of the circle of Willis.

Two of the patients were young (aged 21 and 30 respectively). The third was aged 49, but she showed comparatively little evidence of arteriosclerosis. In each case a syphilitic or 'mycotic' origin for the aneurysms could practically be excluded, both on clinical and pathological grounds. In two cases in which inquiry was made, no history of old or recent trauma to the head was elicited.

Detailed histological examination has been made of the wall of each of the five aneurysms found in these three cases; a report is given of the serial sections through a vessel showing what appeared to be a very early stage in the production of aneurysm. The larger sacs showed the microscopical changes described by Eppinger under the heading of 'congenital' aneurysms. The smallest (youngest) aneurysm showed a localized defect in its muscular and elastic coats, which would seem to be consistent with Eppinger's hypothesis of a congenital basis for these lesions. One of the patients whose cases form the subject of this
paper showed, post-mortem, in addition to three cerebral aneurysms, cardiovascular maldevelopments in the form of coarctation of the aortic isthmus, a bicuspid aortic orifice, and fenestration of the mitral cusps.

Reference is made to three other cases from the literature, in which the rare condition of coarctation of the aorta has been associated with the presence of one or more aneurysms in the brain. This association lends additional support to the view that aneurysm of the cerebral arteries may, like the aortic deformity, have a congenital basis in local maldevelopment of the vessel-wall.

R. M. S.


The authors have studied the spread of the virus in the nervous system of infected monkeys. When injections of virulent material were made into the brain, the site of inoculation remained virulent for 4 to 5 days, but thereafter lost its virulence. After the fifth day the pons and the spinal cord became virulent, but usually not until the first symptoms of paralysis had appeared. After intranasal infection the olfactory bulb was the first part of the brain to become virulent, indicating a spread of virus along the olfactory nerves. After injections directly into the ventricles, the cerebrospinal fluid might remain virulent for several days, but it was never found to be virulent when the virus had been inoculated either into the nasal mucosa or the cerebral tissue.

The observation made by Römer that paralysis usually appears first in the lower limb of the side opposite to that of the cerebral inoculation was confirmed, and is cited as evidence that the virus spreads along the axons rather than by the meninges or the ventricular system. By histological methods it was shown that the inflammation passed from the cortex first to the thalamus and midbrain and thence to the pons, spinal cord and the opposite hemisphere. This march of events also suggested a spread by axonal channels. Meningeal infiltrations were sometimes due to actual inflammation of the meninges, but more often appeared to result from the discharge of inflammatory cells along the perivascular spaces from deeper areas of inflammation. The authors conclude that the virus does not readily multiply in the cerebral cortex, but rather tends to pass via the nerve fibres to its seat of election, the anterior horn cells of the spinal cord, usually selecting first those of the lumbar enlargement.

J. G. G.


The author has studied the experimental disease in monkeys at all stages, using up-to-date histological methods. He finds that the chief incidence of
the disease is on the nerve-cells of the ventral horns of the cord, which begin to degenerate as soon as the earliest signs of inflammation appear in their neighbourhood. The degeneration of these cells is therefore in no way due to the accompanying interstitial inflammation. In the cellular reaction polymorphonuclear cells at first play a large part, and their presence may be demonstrated even in the later stages by the oxydase reaction. Later the microglia becomes proliferated, giving rise to the ‘polyblasts’ and ‘elongated glial cells’ of the older authors. The haemorrhages so frequently seen appear to be largely due to rupture of congested vessels at the autopsy.

J. G. G.


The author discusses the presence of cocci in the blood and nervous system of monkeys experimentally infected with poliomyelitis which have been found by several American observers. By using the greatest care to prevent accidental contamination he obtained sterile material which contained the virus of poliomyelitis, but unless great care was taken cocci of various kinds were frequently found in cultures. He concludes that the cocci which have been found by others, as well as those which he himself cultivated, are airborne contaminants, or terminal invaders of sick animals, and have no etiological relationship to the disease.

J. G. G.


The author draws attention to the resemblance between the cellular reaction to inflammatory processes in the nervous system and that which takes place in other tissues of the body. Fibroblasts repair while polyblasts scavenger. From this he draws an analogy of the macroglia or astrocytes dealing with repair and of the microglia or Hortega cells dealing with removal of the products of disintegration. Thus far, he offers no new theory, but when he states that the reaction in the nervous tissue is limited to ectodermal cells, he treads on controversial ground, since he assumes that microglia is an ectodermal derivative. This is an expression of a German school of thought and is in direct contrast with that of the Spanish school, which has received ample verification in other countries. His deductions may, therefore, be erroneous, and are certainly open to considerable criticism.

E. A. C.
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The technique described by the authors consists in staining paraffin sections of nervous tissue with cryptocyanine and taking photographs on specially sensitised plates using a very deep red Wratten filter, nos. 87, 88 or 88a. The method gives excellent pictures of neuroglia fibrils, but its chief value has resided in the demonstration of mitochondria in normal and pathological nerve-cells. This structure had been studied by Cowdry in the nerve-cells of the dorsal root ganglia, but had not been previously described in the nerve-cells of the central nervous system. Unlike the Golgi apparatus it does not alter its appearance during the phenomena of chromatolysis, but it becomes lost when the cell is filled with lipochrome as in amaurotic family idiocy and senile dementia.

J. G. G.

SENSORIMOTOR NEUROLOGY.

[214] Holmgren's frontal reflex (Beitrag zur Kenntnis des Holmgren'schen Frontalreflexes).—ALBERT GRONBERG. Acta. med. Scand. (Supplementum), 1928, xxv.

HOLMGREN'S frontal reflex is constituted by a bilateral elevation of the eyebrows elicited by rubbing or stroking the skin of the brow near the midline. In this way the phenomenon belongs to the group of supraorbital reflexes examined previously by MacCarthy (1901) and Bechterew (1903). The author has studied the behaviour of Holmgren's reflex in 444 individuals, comprising 300 normal subjects and 144 patients suffering from various diseases.

The main conclusions of the author may thus be tabulated:

1. A phenomenon simulating a positive frontal reflex (Fr. R.) can occur in cases without brain disease.
2. A positive or negative (Fr. R.) is not connected with any particular clinical picture.
3. Aphasia is more often combined with a positive than a negative (Fr. R.); an extrapyramidal type of tremor is very frequently associated with a positive Fr. R.
4. The Fr. R. behaves in states of lethargy and coma as other reflexes, i.e., it disappears when the coma is deep.
5. A positive Fr. R. is seen in general intoxications; in injuries of the cortex and meninges; in diseases of the basal ganglia accompanied or not by cortical lesions.
6. No certain anatomical localization has been traceable as the basis of a positive Fr. R.