which often plays so important a part in the symptomatology of the disease.

But such distinctions are too nice. Although the fact of their analysis and correction is a clinical touchstone for sane hallucinations and illusions, yet the same morbid process is responsible for the production of the sane and insane varieties as far as their elaboration in the areas of which they are judged to be focal symptoms. The insanity of such phenomena depends on their effect on the personality; in many instances we may find a pathological basis for this effect in diffuse morbid changes or a toxæmia, but we cannot disregard the fact that in themselves they constitute a serious form of "mental stress," and, as the researches of Mondio suggest, may produce apathy or psycho-motor excitement.

To sum up: The situation of a tumour relative to the great association schema, which Fleschig has shown exists in the brain, determines to a great extent the incidence of mental symptoms in its clinical course. Any tumour which isolates the frontal from the posterior association centres produces stupor and varying degrees of dementia. An irritative lesion of these association centres, on the other hand, may produce a perversion of their function. In the case of the posterior association centres this results in hallucinations, and in the case of the frontal association centres, in those perversions of the idea of personality described by Welt, Durante, Jastrowitz and others.

Conjugal General Paralysis. By COLIN MCDOWALL,

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THE following three cases of conjugal general paralysis are recorded, not that they present any remarkable features singly, but that collectively they afford further evidence of the close relation of this disease to syphilis.

(1) H. McE—, æt. 42, rivetter, married fourteen years. For six months before admission had been drinking heavily. His father was a drunkard. Patient had been out of work on account of bad trade for two years. Mental symptoms were noticed eighteen months before admission. He was listless, childish and apathetic. On admission,

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dirty and demented; he could not answer the simplest questions. He has had several seizures, and is at present confined to bed in a paralysed condition. He contracted syphilis from his wife, but it has been found impossible to fix the exact date of this occurrence.

M. McE—, æt. 32, formerly a barmaid. Mother and cousin are insane. Patient had no children, but several miscarriages. A woman of loose character, she was of drunken habits and associated after marriage with other men. Contracted syphilis and infected her husband. Signs of mental derangement commenced six months before admission. Physical signs were well marked and characteristic of the disease. Mentally she was childish, and on interrogation she, although para lysed, always replied "champion." She rapidly deteriorated, and after several congestive attacks died at the end of three months. The *post-mortem* presented cerebral atrophy, with marked cortical erosions and a thickened pia. There were no signs of cicatricial tissue in the liver or spleen, but the endocardium covering the base of the aorta was roughened.

(2) J. R. H—, æt. 48, butcher, a successful business man, in his prosperity gave way to drink; the business gradually left him and he suffered from worry and want. He contracted syphilis and infected his wife. On admission he was ataxic, had a slurring speech and fixed, unequal pupils. Mentally, he was at the commencement of the disease noisy, excitable and restless; he became gradually stupid and dull and died quite demented, his illness having lasted just over three years. *Post-mortem* showed typical changes; opacity of pia with excess of fluid, marked cerebral atrophy, dilated lateral ventricles and a granular fourth ventricle. No cicatrices were formed, but the base of the aorta was roughened. Tubercle was present in the lungs.

S. J. H—, æt. 45. A widow when she married the subject of the previous paragraph. She had to her first husband one healthy son and no miscarriages. Her second husband infected her with syphilis at an early date, and she had repeated miscarriages but no children. She was a perfectly steady woman and nursed her husband during the commencement of his illness, and frequently visited him after his admission to the asylum. She was reduced to very poor circumstances, and the initial symptom in her case was an attack of acute excitement. She was subsequently certified, and presented the characteristic signs of general paralysis, tremors of the tongue, lips and hands, unequal fixed pupils and slurring speech. Her mental condition following the acute stage was one of increasing dementia. She had several congestive attacks and spent months in bed recuperating. She died after the disease had been in progress a little over five years.

Post mortem changes showed cerebral wasting with adherent pia, granulations of the fourth ventricle with dilated lateral ventricles. No cicatrices were found in the glandular organs. Aortic endocardium was roughened. The lungs were tubercular.

(3) J. T. B—, æt. 48, musician. Married for twenty-five years. He was a very unsteady man, neglected his work and was constantly out of employment. His wife lived apart from him after a few years of married life, but they came together again and he infected her with syphilis; the exact date is, however, unknown.

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The history regarding the onset of his illness is defective. On admission he was an advanced general paralytic, boastful and with a defective memory. Physical signs were distinctive, and epileptiform convulsions terminated his life after eight months' detention in the asylum.

The *post-mortem* revealed a marked condition of pachymeningitis hæmorrhagica. The cerebral convolutions were atrophied and the cortex eroded. The lateral and fourth ventricles showed granular ependymata. No cicatrices were found in the internal organs, but there was evidence of aortitis.

D. E. B—, æt. 49. She had an unhappy married life, no children, but several miscarriages. She engaged in the baking trade after leaving her husband, but the business was not a success and she became insane. She ultimately recovered sufficiently to be discharged, but relapsed and was admitted into Newcastle City Asylum suffering from delusions; she said she was the King of Copenhagen's daughter and was expecting royal visitors. Her mental condition at the present time is one of elevation. She says she is the Queen, and signs her name as that personage. Her speech is incoherent and her answers irrelevant. The physical signs present are tremulous tongue and lips, a hesitating speech, and unequal pupils with reflex iridoplegia.

These three examples of general paralysis occurring in husband and wife present points of interest and certain points in common. Conjugal general paralysis is by no means rare, but the recorded cases are comparatively few. A possible explanation of the apparent rarity of the disease is that the patients are frequently a roving, unsettled class, ending their lives in different asylums, and they are often so demented on admission that no reliance can be placed on their statements.

The most striking feature in the six individual examples of the disease under discussion is syphilis. There is most definite evidence of specific infection in each case. Twice the husband has conveyed the disease to his wife, and once he has contracted it from her. There does not appear to be any definite period after infection at which the signs of mental disturbance show themselves. Those first inoculated do not necessarily show the first signs of nervous degeneration. Kéraval and Olaviact published five cases of conjugal general paralysis in which a variety of causal factors were brought forward. Syphilis could only be ascertained with certainty in one case. *Post-mortem*, it is rare to find in general paralysis gross evidence of syphilis. However, a very suggestive, if not absolutely convincing, piece of evidence is a roughened endocardium over the base of the aorta. This was present in every one of the present

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series of cases which died. Cicatrices were in no instance discovered in the liver or spleen. Mott has demonstrated what an important *rôle* stress plays in the production of general paralysis. In each of the six cases under discussion stress as a causal factor is clearly in evidence. Alcohol is also a prominent feature in four instances, but I am inclined to regard intemperance as an agent in the production of "stress," and, as in Case 1 in the man, a symptom in the commencement of the illness rather than a cause.

Not only is the stress a mental state, but it also is a physical condition. In Case 2 and in the instance of the woman in the third example there was, following the mental worry, a lack of suitable and regular nourishment. It might be suggested that the remissions so frequently seen in general paralysis when under systematic treatment are in the same way due to irregular habits and food.

I hesitate to enlarge further upon a matter so frequently discussed, but Kraft-Ebing has shown by the application of the law of acquired immunity that a general paralytic is immune from syphilis. Although all persons who have contracted syphilis do not develop general paralysis, we know that it is a neuro-toxic element of great potency. Many individuals escape its later manifestions. Just as in diphtheria, paralysis is a comparatively rare sequela, the selective circumstances of which are at present unknown.

This small series of cases has been recorded merely to add to the already enormous amount of evidence supporting the statement that syphilis is essential in the production of general paralysis.

An Unusual Method of Suicide. By GUY ROWLAND EAST, Assistant Medical Officer, Northumberland County Asylum.

A PITMAN, æt. 55, was admitted to this Asylum at 8 p.m. on May 31st, 1908, with the following history: In the afternoon of the same day he filled his mouth with gunpowder and ignited it, with the intention of blowing off his head. The patient had been subject to periodical attacks of depression, and the scar of a cutaneous incision on the front of the neck

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