enormously distended, and in the Rolandic region the brain substance was only five millimetres in thickness. A tumor occupied the third ventricle. In a case of cholesteatoma of the floor of the third ventricle, in which the symptoms persisted at intervals for eight or nine years, the ventricles were enormously distended without enlargement of the skull. In other instances the sutures separate and the head gradually enlarges.

The symptoms of hydrocephalus in the adult are curiously variable. In the case first mentioned there were early headaches and gradual blindness; then a prolonged period in which she was able to attend to her studies. Headaches again supervened, the gait became irregular and somewhat ataxic. Death occurred suddenly. In the other case there were prolonged attacks of coma with a slow pulse, and on one occasion the patient remained unconscious for more than three months. Gradually progressing optic neuritis without focalizing symptoms, headache, and attacks of somnolence or coma are suggestive symptoms. Cases are rare as a result of meningitis. The only instances I have seen were two which corresponded to the posterior meningitis of Gee and Barlow, in which, with the distention, there was extensive chronic purulent ependymitis.

Treatment.—Very little can be done to relieve hydrocephalus. Medicines are powerless to cause the absorption of the fluid. More rational is the system of gradual compression, with or without the withdrawal of small quantities of the fluid. The compression may be made by means of broad plasters, so applied as to cross each other on the vertex, and another may be placed round the circumference.

Of late years puncture of the ventricles, an operation which had been abandoned, has been revived, particularly by Keen, and in a few cases is justifiable. When pressure symptoms are marked it may be employed with great relief to the headache and removal of the spastic state of the legs. Quincke recommends, and has practised in these cases, as well as in acute hydrocephalus, puncture of the subarachnoid sac between the third and the fourth lumbar vertebræ. At this point the spinal cord cannot be touched. The advantage is a slower removal of fluid and less danger of collapse.

IV. GENERAL AND FUNCTIONAL DISEASES.

I. ACUTE DELIRIUM (*Bell's Mania*).

Definition.—Acute delirium running a rapidly fatal course, with slight fever, and in which post mortem no lesions are found sufficient to account for the disease.

Cases are reported by many old writers under the term brain fever or phrenitis. Bell, at the time Superintendent of the McLean Asylum, described it* accurately under the designation, "a form of disease resembling some advanced stages of mania and fever."

The disease may set in abruptly or be preceded by a period of irritability, restlessness, and insomnia. The mental symptoms develop with rapidity and may quickly reach a grade of the most intense frenzy. There are the wildest hallucinations and outbreaks of great violence. The patient talks incessantly, but incoherently and unintelligibly. No sleep is obtained, and at last, worn out with the intensity of the muscular movements, the patient becomes utterly prostrated and assumes the sitting or recumbent posture. There may sometimes be definite salaam movements, and in a case which I saw at Westphal's clinic the patient incessantly made motions as if working a pump handle. After a period of intense bodily excitement, lasting for from twenty-four to thirty-six hours or longer, the patient can be examined, and presents the conditions which Bell described as typho-mania. The temperature ranges from 102° to 104°, or even higher. The tongue is dry, the pulse rapid and feeble, and sometimes there are seen on the skin bullæ and pustules, and frequently sores from abrasion and self-inflicted injuries. Toward the close or, according to Spitzka, even during the development of the disease there may be lucid intervals. There may be petechiæ on the skin, and often there is marked congestion of the face and extremities. The duration of the disease is variable. Very acute cases may terminate within a week; others persist for two or even three weeks. The course of the disease is almost uniformly fatal. The anatomical condition is practically negative, or at any rate presents nothing distinctive. There is great venous engorgement of the vessels of the meninges and of the gray cortex. In two cases in which I made a careful microscopic examination of the gray matter there were perivascular exudation and leucocytes in the lymph sheaths and perigangliar spaces. In the inspection of fatal cases of acute delirium careful examination should be made of the lungs and ileum. It should be borne in mind that in a majority of the cases dying in this manner, there is engorgement of the bases of the lungs or even deglutition pneumonia.

The nature of the disease is quite unknown. Some of the cases suggest acute infection. Spitzka thinks that it is due to an autochthonous nerve poison.

Diagnosis.—There are several diseases which may present identical symptoms. As Bell remarks in his paper, the first glance in many cases suggests typhoid fever, particularly when the patient is seen after the violence of the mania subsides. He gives two instances of this which were admitted from a general hospital. Enlargement of the spleen, the occurrence of spots, and the history give clews for the separation of the cases; but there are instances in which it is at first impossible to decide. More-

* American Journal of Insanity, 1849.

over, typhoid fever may set in with the most intense delirium. The existence of fever is the most deceptive symptom, and its combination with delirium and dry tongue so commonly means typhoid fever that it is very difficult to avoid error.

Acute pneumonia may come on with violent maniacal delirium and the pulmonary symptoms may be entirely masked.

Occasionally acute uræmia sets in suddenly with intense mania, and finally subsides into a fatal coma. The condition of the urine and the absence of fever would be important diagnostic features.

The character of the delirium is quite different from that of *mania à potu*. It may be extremely difficult to differentiate acute delirium from certain cases of cortical meningitis, which, however, is usually a secondary affection, occurring in connection with pneumonia or ulcerative endocarditis, or is due to extension from disease of the ear. This sets in more frequently with a chill, and there may be convulsions.

Treatment.—Even though bodily prostration is apt to come on early and be profound, I would not hesitate to advise, in the case of a robust man, free venesection. It is not at all improbable that some of the many cases of mania in which Benjamin Rush let blood with such benefit belonged to this class of affections. Considering its remarkable calming influence in febrile delirium, the cold bath or the cold pack should be employed. Morphia and chloroform may be administered, and hyoscine and the bromides may be tried. Krafft-Ebing states that Solivetti has obtained good results by the use of ergotin. Unfortunately, as asylum reports show, the disease is almost uniformly fatal.

II. PARALYSIS AGITANS

(*Parkinson's Disease; Shaking Palsy*).

Definition.—A chronic affection of the nervous system, characterized by muscular weakness, tremors, and rigidity.

Etiology.—Men are more frequently affected than women. It rarely occurs under forty, but instances have been reported in which the disease began about the twentieth year. It is by no means an uncommon affection. Direct heredity is rare, but the patients often belong to families in which there are other nervous affections. Among exciting causes may be mentioned exposure to cold and wet, and business worries and anxieties. In some instances the disease has followed directly upon severe mental shock or trauma. Cases have been described after the specific fevers. Malaria is believed by some to be an important factor, but of this there is no satisfactory evidence.

Morbid Anatomy.—No constant lesions have been found. The similarity between certain of the features of Parkinson's disease and those of old age suggest that the affection may depend upon a premature senility of certain regions of the brain. Our organs do not age uniformly, but in some, owing to hereditary disposition, the process may be more rapid than in others. "Parkinson's disease has no characteristic lesions, but on the other hand it is not a neurosis. It has for an anatomical basis the lesions of cerebro-spinal senility, and which only differ from those of true senility in their early onset and greater intensity." (Dubief.) The important changes are doubtless in the cerebral cortex.

Symptoms.—The disease begins gradually, usually in one or other hand, and the tremor may be either constant or intermittent. With this may be associated weakness or stiffness. At first these symptoms may be present only after exertion. Although the onset is slow and gradual in nearly all cases, there are instances in which it sets in abruptly after fright or trauma. When well established the disease is very characteristic, and the diagnosis can be made at a glance. The four prominent symptoms are tremor, weakness, rigidity, and the attitude.

Tremor.—This may be in the four extremities or confined to hands or feet; the head is not so commonly affected. The tremor is usually marked in the hands, and the thumb and forefinger display the motion made in the act of rolling a pill. At the wrist there are movements of pronation and supination, and less marked of flexion and extension. The upper-arm muscles are rarely involved. In the legs the movement is most evident at the ankle-joint, and less in the toes than in the fingers. Shaking of the head is less frequent, but does occur, and is usually vertical, not rotatory. The rate of oscillation is about five per second. Any emotion exaggerates the movement. The attempt at a voluntary movement may check the tremor (the patient may be able to thread a needle), but it returns with increased intensity. The tremors cease, as a rule, during sleep, but persist when the muscles are at repose. The writing of the patient is tremulous and zigzag.

Weakness.—Loss of power is present in all cases, and may occur even before the tremor, but is not very striking, as tested by the dynamometer, until the late stages. The weakness is greatest where the tremor is most developed. The movements, too, are remarkably slow. There is rarely complete loss of power.

Rigidity may early be expressed in a slowness and stiffness in the voluntary movements, which are performed with some effort and difficulty, and all the actions of the patient are deliberate. This rigidity is in all the muscles, and leads ultimately to the characteristic

Attitude and Gait.—The head is bent forward, the back is bowed, and the arms are held away from the body and are somewhat flexed at the elbow-joints. The face is expressionless, and the movements of the lips are slow. The eyebrows are elevated, and the whole expresion is immobile or mask-like, the so-called Parkinson's mask. The voice, as pointed out by Buzzard, is apt to be shrill and piping, and there is often a hesitancy in beginning a sentence; then the words are uttered with rapidity, as if the