

On resuming the audience, the Court rendered the following judgment :—

“Whereas if it seems established that D— committed the acts for which he has been indicted, it is not sufficiently established that he is morally responsible for them.

“Considering, in fact, as it results from Dr. Motet’s examination extending back to a long date, that the accused falls often into a state of somnambulism, that in such state he could not be held responsible for his acts ; whereas the said examination has been further strengthened by an experiment before the Chamber in council ; and that under such circumstances D— could not be regarded as responsible, the Court annuls the judgment on appeal, and dismisses D— from all charge.”

3. *German Retrospect.*

By WILLIAM W. IRELAND, M.D.

The German Retrospect has been done from the following periodicals :—

“Archiv. für Psychiatrie und Nervenkrankheiten,” x. Band, 2 and 3 Heft, 1880 ; xi. Band, 1 and 2 Heft. Berlin, 1881.

“Allgemeine Zeitschrift für Psychiatrie,” xxxvi. Band, 4, 5 and 6 Heft ; xxxvii. Band, 1 Heft, 2, 3, and 4 Heft. Berlin, 1880.

“Centralblatt für Nervenheilkunde, Psychiatrie, und Gerichtliche Psycho-Pathologie,” Nrs. 15 to 24, 1880 ; and Nrs. 1 and 2, 1881, Leipzig.

“Der Irrenfreund.” Nrs. 7 to 12, 1880 ; and Nr. 1, 1881, Heilbronn.

“Verhandlungen der Physiologischen Gesellschaft zu. Berlin,” 9th August, 1880.

“Die Schrift, Grundzüge ihrer Physiologie and Pathologie,” von Dr. Albrecht Erlenmeyer. Stuttgart, 1879.

The Central Origin of the Optic Nerves.

This, according to Stelling (“Centralblatt für Nervenheilkunde,” 15th August, 1880), is as follows :—

1. From the branch which enters the optic thalamus in part by means of the lateral corpus geniculatum.
2. From the known branch which goes and the middle of the corpus geniculatum.
3. From the superficial branch which goes directly to the corpora quadrigemina.
4. From the origin of the crus cerebri.
5. From the tuber cinereum.
6. From the locus perforatus anticus.
7. From the surface of the optic thalami.

There are also ganglia near the tuber cinereum for the origin of the optic nerve, but it is not known what significance this has in single cases.

On the Retardation in the Conduction of Sensory Impressions.

Dr. A. Takacs has devised an instrument for the registration of tactile impressions, which is described in the "Archiv," x. Band, 2 Heft. It was found that only in three healthy cases the time for the apprehension of a sensory impression exceeded half-a-second; the shortest time registered is 0.19. In ataxia the period of conduction was retarded, and this retardation had a marked relation to the parts affected. Thus where the muscles of the face had no ataxic movements the sensory impressions were not retarded, but where there was a slight ataxia of the hands there was also a marked retardation, and where the ataxia affected the feet to a considerable degree there was a retardation amounting to as much as three seconds. The prolongation of the sensory impressions seemed to be in proportion to the ataxic character of the movements.

Dr. Takacs considers that his experiments confirm what he had previously observed, that when ataxia is increased by shutting the eyes, there is also anæsthesia or hyperæsthesia.

Accidental Vivisection of the Spinal Cord.

Dr. Richard Schulz ("Centralblatt für Nervenheilkunde," Nr. 15, 1880) gives a case which occurred in Brunswick, illustrating the physiology of the spinal cord. A man was set upon by some workmen, and, amongst other injuries, received a stab between the spinal processes of the fifth and sixth dorsal vertebræ, swerving a little towards the right. The knife was found sticking in the man's back, and it required great force to pull it out. It had evidently penetrated the right side of the spinal cord, for there were hyperæsthesia and slight paralysis of the right leg, and anæsthesia of the left leg, with paralysis of the bladder and rectum. The wounds healed up in about three weeks, but Schulz did not see the patient till about six months after the occurrence. He complained of great weakness of the right leg, with a tendency to tremor, and great tenderness of the skin of the right leg and right side of the body, below the stab, and a feeling of sleeping of the left foot and leg. The right leg was thinner than the left, and the muscular sense seemed diminished. Sensibility to the continuous and interrupted current, as well as the reaction of the patellar tendon reflex, was much increased in the right leg, but irritability of the muscles to electricity was not increased. The symptoms were all capable of explanation by the known physiology of the cord, save the hyperæsthesia of the right leg.

The Cortical Centres for Sight and Smell.

Dr. Herman Munk, at a meeting of the Physiological Society of Berlin ("Verhandlungen," 9th August, 1880, Nr. 18) gave the

results of his latest experiments, made with a view to ascertain the visual and olfactory centres of the brain. His experiments upon the dog support the view, which he had already published, that the visual centre is to be found in the grey matter of the occipital lobes. If these are destroyed the dog is what he calls "seelenblind," that is although the optical apparatus of the eye is uninjured, visual impressions do not reach the mind, and the animal makes use of the sense of smell alone when he gropes for his food. In the monkey he showed that there was hemiopia after the extirpation of one occipital lobe.

Dr. Munk is pleased that Luciani and Tambourini have confirmed this observation, but blames them for finding hemiopia when the gyrus angularis is destroyed, a symptom which passes away with time. He himself has again examined the gyrus angularis, and has no doubt whatever that it has nothing to do with vision, but with the common sensation of the region of the eye. On the other hand, after the complete extirpation of the occipital lobes dogs remain quite sightless, with no improvement for months. He finds, on removing the cortical matter of one occipital lobe, that the right centre corresponds to the left half of both retinas. When he removed one-half from the side of the occipital lobe from the left side the monkey was blind in the lateral temporal half of the left retina, but when the median half of the left occipital lobe was removed the monkey was blind in the middle (nasal) half of the right retina. In a monkey he removed the lateral half of the left visual centre, and after the wound healed the middle half of the right visual centre, the result being that the animal became sightless in the left eye, and this continued during the time that he survived the operation, from six to thirteen weeks.

Dr. Munk states that he found he could produce blindness in patches of the retina by removing circumscribed portions of the grey matter of the occipital lobe. He believes that he has discovered the seat of olfactory sensation in the gyrus hippocampi. In the lower mammalia, which have the sense of smell highly developed the gyrus hippocampi is large; in those higher mammalia, in which the sense of smell is slight, the gyrus is small. Munk observed in a dog, which had become sightless from extirpation of the visual centres, that the sense of smell was also lost. It was no longer guided to its food by the scent, and only snapped up food when it was aware of its presence by the touch. It would put sponge into its mouth instead of flesh, which it dropped when the difference of taste was perceived.

On examination after death it was found that both gyri hippocampi had been disorganised into a fluid, distending the outer wall, as water does a bladder. The anatomical connections of the gyrus also favour the idea that it is physiologically connected with the olfactory tract. Dr. Munk thus rejects Ferrier's views as to the seat of the centres of sight, smell, and feeling. Ferrier places the visual centre in the gyrus angularis; Munk in the occipital lobe. Ferrier places the centre of tactile sensation in the region of the gyrus hippocampi and uncinatus, while Munk places the centre of olfactory sensation in the

first of these gyri, and will not even allow tactile sensation to remain in the gyrus uncinatus.

Experiments on the Temperature of the Brain.

Dr. Maragliano, of Genoa ("Centralblatt der Med. Wissenschaft," Nr. 27) has made some experiments on the dead body in order to ascertain whether the temperature within the cranium is correctly indicated through the thermometer laid upon the scalp.

Placing three thermometers on different parts of the shaved head, he introduced another thermometer within the skull, the cavity of which was filled with hot water. He found on comparing the temperature of the outer and inner thermometer that within half-an-hour the difference was about 2°. Dr. Maragliano observes that in many cases the temperature of the head has been found to be higher than that of the axilla, showing that the brain has a heat independent of the general temperature. He found that to obtain correct results it was often necessary to prolong the observation for an hour. Dr. Maragliano concludes from his investigations—

1. That the thermometer placed upon the skin of the head directly indicates the variations of the temperature within.
2. The temperature of the left side of the head is always higher than that of the right.
3. The temperature at the external orbital angle and behind the ear is higher than that at the external occipital protuberance.
4. Mental activity, age and sex have a marked influence upon the temperature of the brain.

Case of Deficiency in the Brain.

Dr. Chiari ("Centralblatt für Nervenheilkunde," 1 November, 1880) on examining the brain of a girl who died of phthisis, at the age of 13, found a considerable deficiency of the brain in the left temporal lobe, in the region of the temporal gyri, and the anterior end of the gyrus fusiformis. There was a fissure seven centimetres long, two broad, and 1.5 c. deep. This fissure ran in its posterior half very near the middle corner of the third ventricle. The wall of the fissure was covered with pia mater, and the interval between it and the arachnoid was filled with a clear serous fluid. The rest of the brain had a normal appearance; but there was an increase in the neuroglia with fatty granules and brown pigment corpuscles, showing that the deficiency in the brain was owing to inflammation or fatty degeneration and hæmorrhage. We are told that no cerebral disturbance was noticed during the girl's life, though it is not said what degree of intellect she possessed.

Notes on the Gyrus Angularis after the Loss of an Eye.

Dr. Burckardt in the Report of the Anstalt Waldau in the Canton of Berne (quoted in the "Centralblatt für Nervenheilkunde," 1 September, 1880) gives the following case. An idiot, 22 years of age, had

lost the right eye in infancy, probably through an injury. The left eye showed a strong nystagmus. The sight was pretty good. He died of purpura hemorrhagica. The convolutions were fairly developed, but there was a decided difference in the gyri angularis of either side. On the right side it was well developed ; on the left the convolution was smaller and narrower. The praecunulus on the left side was also smaller.

Supposed Lesion to the Auditory Centre.

Dr. Schäfer ("Centralblatt für Nervenheilkunde," 1 February, 1881) details a case illustrating some curious points in the physiology and pathology of the brain.

E. M., a man of 45, was received into the asylum at Pankow, on the 30th of May, 1879. Two years before there had supervened a noticeable weakness of judgment and slight injury to speech, and in December, 1877, he fell down in the street without consciousness, but recovered in a few minutes. He had similar attacks of unconsciousness in March and June, 1878, and was accidentally injured by a waggon driving over his head. Since then there were irritability, loss of memory, and a slight stammering, and on the 30th of April he became suddenly so excited that he was brought to the asylum. On entering it was noticed that there were mental weakness and convulsions of the left side of the face, slight leaning of the body to the left side, trembling of the legs and hands, and slight disturbance of speech. On the 7th of June the patient had an epileptic attack with incomplete paralysis of the left side of the body. Next day there were clonic convulsions of the affected side. On the 9th June the motor paralysis was complete, with diminution of sensibility on the right side, and a deviation of the head and eyes to the right. This was followed by delirium. In about a week the symptoms began to improve. The bodily temperature was not raised, nor the pulse quickened.

On the 18th of June, after consciousness had returned, the patient had in some measure recovered the use of his limbs. He lay with his right side to the wall, and when any one spoke to him from the left, he regularly turned his face towards the wall, as if speech were addressed from the right side. When Dr. Schäfer asked him to look at him, the patient turned round to the left. Two days afterwards he was able to get up. When any one spoke to him from the left, he always turned to the right, and when he got the military command, too well known to every German, "Rechts um," he turned the wrong way. Dr. Schäfer observes that two explanations are possible about the strange mistake of referring sounds from one side of the body to the other. The patient may have heard correctly and known whence the sounds in his own ear came ; but through disorder of the muscular system his motions were different from what he designed. It seems more probable that the impressions taken in at one ear found their mental realisation in the cortex of the opposite hemisphere, and on this account were projected outwards by the mind

to the opposite side. Dr. Schäfer quotes Munk's experiments to show that the auditory centre is in the temporo-sphenoidal lobe. When this part is injured, there is what Kussmaul calls "word-deafness." Of course Dr. Schäfer regards the little abscess in the right temporal lobe as a sufficient explanation of the want of realisation of sounds on the left side; but it is not so easy to explain the second occurrence when the sounds on the left were referred to the right. He endeavours to explain it by the supposition that the parts around the abscess had in the meantime learned to take up the vicarious function, and that the left side in its turn had become diseased. He observed hyperæmia in the under surface of the left temporo-sphenoidal lobe, and on microscopic examination there were found increased vascularity and dilatation of the vessels, numerous spider cells, and changes in the contents of many of the ganglion cells.

The Idiots of Brunswick.

For the last 14 years Dr. Berkhan has been making observations on the idiots of the City of Brunswick, both in asylums, poor-houses and schools, as well as in his private practice ("Zeitschrift," xxxviii Band, 3 Heft.). The population of Brunswick is about 72,085, and Dr. Berkhan has found 116 idiots, *i.e.*, one to every 621 persons. Of these 75 were male and 41 female; 40 males and 29 females were full idiots (vollidioten); and 35 males and 25 females imbeciles. His tables show that idiots are a short-lived class. There were 97 under 30 years of age, and only 19 above this period. There was but one, an imbecile man, above 55 years of age. Twenty-nine of these idiots were first-born children, 19 males and 10 females. He does not give the average rate of fecundity in Brunswick. Dr. Berkhan treats of eclamptic fits as symptomatic of idiocy. It is to be regretted he has not studied them as a cause, especially as in the course of his practice he seems to have seen some idiots in early childhood. He finds great mortality in the brothers and sisters of idiots. Eighty idiots had 245 brothers and sisters, and of these 143 were dead, many of them of epileptic fits. Without the ages of these idiots and their relations, this species of statistics is of uncertain value. He has some tables giving the measurement of the heads of idiots and their increase of size as they get older.

Microcephalic Idiocy.

Dr. Berkhan, of Brunswick ("Zeitschrift," xxxvii Band, 2 Heft) describes nine cases of microcephalic idiocy which he has seen in different parts of Germany. Three of these were male and six female. Two were in their own homes, one in a lunatic asylum, and six in institutions for idiots which contained about 500 idiots in all. From this it appears that the proportion of microcephales to other idiots is not greater than 1 per cent. It is remarkable that many of these microcephales had brothers and sisters with the same deformity. He

notices three microcephales, two brothers and a sister, in one family and four in another, and quotes the observation of Vogt, who had seen seven microcephales in four families in one small village near Stutgardt. Van Andel said that a villager in Holland had 14 children, of whom four were microcephalic; and in the family Becker there were four microcephalic children, one of whom was described in the well-known monogram of Professor Bischoff.

Dr. Berkhan gives an engraving of a small and mis-shapen skull found amongst the mummies of Egypt, and two statues with very small heads are preserved at Rome, and drawings of men with microcephalic or deformed heads have been found at Palenque, in Mexico. He observes that with other forms of idiocy there are often brothers and sisters who are also idiotic or eclamptic; many of these die in infancy from convulsions or constitutional weaknesses. Microcephales are generally stronger, and grow up. The oldest microcephale of whom he knows lived to the age of 44.

Dr. Berkhan is disposed to favour the view of Klebs, who attributes the small size of the head to abnormal pressure of the uterine walls during the foetal condition, but in some cases he thinks that it may be owing to encephalitis in utero, or to premature closure of the sutures. He gives a short account of the examination of the head of a microcephalic infant who died at the age of fourteen months. The circumference of the head was $29\frac{1}{2}$ centimetres= $11\cdot7$ lines; $15\frac{1}{2}$ c= 6 inches 1 line. The fontanelles were pretty large; the sutures were not united; the bones of the skull thin. The inner surface of the base of the cranium was broad behind. The frontal lobes were rather small in proportion to the brain, and the cerebellum decidedly large. On the left side of the middle lobe, near the base, was a sack filled with fluid about the size of a hazel nut. As the brain was accidentally destroyed it was not weighed, nor a careful examination made of the internal parts. Nothing abnormal was noted about the convolutions.

Dr. Berkhan thinks that the female microcephale, at least, might have progeny. Apparently he is not aware that there is one instance of conception, but the child was still-born. He refers to the Aztec microcephales who lived together as man and wife, but had no offspring.*

* I saw the two Aztecs recently in Glasgow, where they were being exhibited for a penny. They were publicly married in London, in 1867. The female showed jealousy of the male by shaking her finger at him "when he paid attention to other ladies." She was playing with a toy. They said that she was not fond of children. They seemed very gentle and goodnatured, and spoke a few isolated words, such as when I asked the male what he would do with some money, and he answered, "Cigar," being fond of smoking. The female said, "Cold" when the showman exposed her neck to let me see how well nourished she was. The male was said to be forty-six; the female several years younger. I could see no grey hairs. The male had $\frac{1}{4}$ teeth, some of which were decayed. They had both vaulted palates. The male wanted a metacarpal bone in each little finger, and the big toe overlapped the others on each foot. Deformities of the toes are common with idiots. I measured the

Dr. Berkhan knows of a "half idiotic" man who married, but had no children, and of a man who married a half idiotic female, who bore him three children, two of whom were idiots. He observes that female cretins show aversion to male cretins, while attracted by healthy men and that male cretins cast their eyes only on healthy women.

A Microcephale's Brain.

Dr. Chiari ("Centralblatt für Nervenheilkunde." 1st November, 1880) describes the brain of a microcephale, a girl six years of age.

It weighed 507 grammes; the cerebrum 405 grammes. The leading gyri and sulci were present, but not finely divided. There was little variety in the arrangements of the convolutions in either side. The temporal gyri were most deficient, and at the posterior end of the left middle frontal gyrus there was a knot of tubercle about the size of a bean.

All the sutures were open, and there was no abnormality in the skull, save its remarkable smallness. The child could only utter inarticulate words. She did not recognise any objects or ask to be fed.

Temperature in General Paralysis.

Dr. Reinhard ("Archiv," x. Band, 2 Heft) has an article of 129 pages upon this subject. He devotes the first ten to a retrospect of the observations of previous inquirers upon the temperature of the insane, the general result being that it is lower than usual in melancholia and apathetic dementia, and higher in excited, disturbed, and maniacal conditions. It sometimes rises after epileptic attacks.

A great many observers have noted a higher temperature in general paralysis, and this as Dr. Clouston has remarked, serves to distinguish the ordinary epileptic attacks from those of general paralysis, the temperature of the latter being decidedly higher. L. Meyer found a rise of about 2.5° centigrade in all his cases of general paralysis, without the other complications, such as erysipelas, phthisis, or abscesses, to which this high temperature had been ascribed. He found that febrile exacerbations go along with periods of excitement, that the ordinary bodily heat in general paralysis was higher than the normal, and that the temperature of the head was higher than in the rectum; but he failed to observe the regularity in the thermometric curves throughout the disease. He considered general paralysis to be a continued febrile condition, depending upon chronic meningitis.

Dr. Reinhard gives us a careful description of the fifteen cases of general paralysis, whose temperatures were so carefully studied. The other symptoms are also recorded, and the lesions found after death in those already deceased. The temperature was noted three times a day

head of the male microcephale as well as I could for his bushy hair. The measurements were—antero-posterior (from glabella to external occipital protuberance) 8½ inches; circumference 15 inches; transverse (from tragus to tragus) 9½ inches. I returned to make a more leisurely visit, but found the place shut up.—W. W. I.

in the axilla and upon the mastoid process, the lobe of the ear being pressed against the bulb of the thermometer. He found that it took ten minutes to make an accurate observation in the axilla, and twenty-five minutes below the ear lobe. In fact, the ear takes that time to warm up to the general bodily heat. It would have been more satisfactory had observations been taken at three different regions of the head.

Dr. Reinhard always caused his observers to wait four or five minutes after the column of mercury had ceased to rise, to ensure a correct observation. He accepts the data of Bärensprung as fixing the physiological range of temperature. According to Seguin this is 37° C = 98.6° F., with an excursus of $.49$ above the norme, and $.69$ below it. In many of Dr. Reinhard's observations the temperature in the morning fell below the physiological scale, being as low as 36° with a fraction. He seems to pay little attention to this fact, which must strike all who read over the tables; but he remarks in a note that low temperatures occur towards the close of the disease, where there are grave vaso-motor and trophic lesions. A common rise of temperature is from 37° to 38° or even to 38.5° ; but higher than this was rare. In about half the cases of general paralysis the variations of temperature were considerable; in the others less marked, and in one there was little change. The midday and evening temperatures were, on the whole, higher than the morning ones, otherwise it was difficult to reduce the changes into a generalisation. A rise of temperature did not even constantly accompany excitement. The rise of temperature was often found to commence ten or twelve hours before the excitement; more rarely it happened that they came on simultaneously, generally disappearing together. Where the mental excitement was very great it was always accompanied by a high temperature. The frequency of the pulse was found to be proportional to the rise of temperature. On examining the temperature in the axilla on both sides in three cases, where there were paralytic attacks, it was found that the temperature in the paralysed side was higher, and that in proportion to the degree and extent of the paralysis. Dr. Reinhard discusses at length the question whether this rise in temperature during the course of general paralysis has inseparable connection with disease. He avows his conviction that increased heat is really owing to a morbid process going on in the nervous centres. It appears to be a periencephalitis. He combats the view that the rise in the temperature can be caused by inflammatory action in the lungs or other casual diseases.

But it is principally in the diagnosis of general paralysis that thermometric observations are at present of value. Dr. Reinhard has studied the temperature in other forms of insanity, so that he is enabled to indicate the differences existing between them and what is found in general paralysis. He only observed an increase of temperature in primary insanity, when there were serious complications; and even in the excitement of mania and the paroxysms of melancholia

there was no increase in the bodily heat, nor any alteration in the relation of the temperature of the head to that of the axilla. In the stupor of melancholia the temperature was sometimes abnormally low. In puerperal insanity and in the insanity of lactation Dr. Reinhard frequently observed a slight feverish movement, and sometimes in the passive congestion, occurring in these patients, the temperature of the head was found to be as high as that of the axilla.

In these cases there was great variation in the bodily heat from day to day. The degree of dilatation of the pupil changed frequently, and was sometimes unequal on the right and left side. In dementia there was never any rise of temperature, though sometimes it fell below the normal standard, both behind the ear and in the axilla. In chronic insanity, following after alcoholic excesses, the temperature was found to be very low.

Dr. Reinhard finds the differential diagnosis of general paralysis as indicated by the thermometer in the excess of the temperature of the head over that of the body, in the existence of grave variations in the bodily heat from day to day, and in the frequent appearance of slight febrile bodily temperature without any given cause. It is in the earlier stages of general paralysis that he considers the diagnosis will be most assisted by the thermometer. He considers that where these variations exist the disease takes a more rapid course, and that a return to the normal temperature is a favourable symptom. He thinks that the disease should be treated as a chronic inflammatory process, and the aim of the practitioner should be to treat the fluxes and stases in the brain, and to try to obviate their return. Devoting two sentences to the treatment, Dr. Reinhard recommends the guarding the patient against all disturbing influences, bodily and mental repose, a non-stimulating diet, occasional mild purgatives, the frequent application of ice to the head, and moderate local bleedings at the septum narium and the temples. He has a dim suspicion that, in this way, he once cut short the early stage of general paralysis, and refers us to a paper of Dr. L. Meyer ("Berliner Klinische Wochenschrift," 1877, Nr. 21) in which those interested may see that "such treatment seems to be not without effect."

It appears that Dr. Reinhard's MS. was finished in September, 1879, on which account he could not notice the observations of Crömer in the "Allgemeine Zeitschrift der für Psychiatrie," xxxvi. Band, 2 and 3 Heft, of which an abstract was given in the "Journal of Mental Science" for July 1880 (pp. 306-307). On one point Dr. Crömer decidedly disagrees with Dr. Reinhard, as he holds that the temperature of general paralysis, so far from being higher, is abnormally low; but he observes that the general temperature is high in those cases in which the paralytic appearances are severe. Dr. Crömer notices the daily oscillations in the temperature which seem characteristic of the disease.

(To be continued).