

space. One result of Pfitzner's work is to rehabilitate the value and significance of averages which, provided we are dealing with sufficiently large and sufficiently homogeneous data, he found to correspond almost invariably with the plurimum, so that the most frequent dimension is also the average dimension. Reason is also found for questioning the current view that the infant's head is relatively large as compared with the adult's in order to favour the early development of a highly important organ. This question, as Pfitzner viewed it, may be generalised, and is really one of proportion; with the increase of every dimension corresponds, but in decreased degree, the increase of other dimensions; "there is no difference between children and adults, and every individual has the head that corresponds to his stature." The adult standard of proportions would thus not be fixed and preordained, but merely the accident of a stage of growth which has stopped, but would lead to a new scheme of proportions if it could continue. It is evident that Pfitzner was here entering on a new but somewhat difficult field of speculation.

HAVELOCK ELLIS.

2. Neurology.

Old and New Researches on the Brain [Alte und neue Untersuchungen ueber das Gehirn]. (Arch. für Psychiat., B. xxxvi, H. 1.) Hitzig.

In this continuation of his inquiry Dr. Hitzig treats of the relations of the cortex cerebri and of the subcortical ganglia to the function of vision in the dog, and prosecutes his old polemic against Munk. The disputes of these two distinguished physiologists are so far useful that they constitute some safeguard against one being misled, as each is ready as well as able to correct any oversight or error in his opponent's statements. In the present paper Dr. Hitzig gives the details of ninety experiments at considerable length, and illustrates his text with engravings. To give a *résumé* is impossible, and to criticise the interpretation which the professor gives of his experiments would be presumptuous. Those who are engaged in original research will go to Hitzig's paper for themselves. It will be sufficient here to present his conclusions. He found that injuries to the sigmoid gyrus were almost constantly followed by disorders of vision. To produce this result it was sufficient to lay bare the convolution. Injuries to the orbicular centre were followed by disorders of the optic reflexes, and often, too, by a wider opening of the eyelids. If the lesion be made somewhat anteriorly and laterally, approaching the centre for the facialis, it leads to impairment of the nasal reflexes. The anterior limb of the II—IV primitive convolutions, as well as the anterior part of the descending nerve-bundles and the inner capsule, may be injured without any direct disturbance of vision following. It will be remembered that Munk holds that the mental or cortical blindness of certain parts of the retina only results from injuries of the posterior region of the brain. Hitzig promises in a further contribution to consider the effects of lesions to the posterior portions of the hemispheres.

WILLIAM W. IRELAND.

Functions and Diseases of the Frontal Lobe in Man [*Leistung und Erkrankung des menschlichen Stirnhirns, 1 Theil, Graz, 1902*]. (Reported in *Neurol. Cbl.*, Oct. 16th, 1902.) Anton and Zingerle.

There are still many unsolved questions about the functions of the frontal lobe; most investigators think that it contains centres for the muscles of the head and trunk, while Munk places them on the convexity of the hemispheres, and Horsley on the median plane of the marginal gyrus. It seems certain that in front of the sulcus præcentralis there are centres for the movements of the eye. The frontal lobe has an influence on the maintenance of the bodily equilibrium.

In their laborious study of the histology of this lobe the authors have found that the structure of the frontal lobe is not different from that of the other lobes. The great mass of the association fibres lies laterally to the ventricles; the projection and commissural fibres nearer to the middle line. There are regions in the frontal lobe in which the fibres of the corona radiata are scanty. Hence impairment of associations may be explained. The authors point out that injuries to the frontal lobe are frequently followed by atrophy of the opposite side of the cerebellum.

WILLIAM W. IRELAND.

On the Localisation of Cerebral Hemianæsthesia [*Zur Localisation der cerebralen Hemianästhesie*]. (*Neurol. Cbl.*, No. 21, 1902.) Schaffer.

Dr. Schaffer observes that there are centripetal nerve-tracts which end in the optic thalamus, from which another neuron issues which passes to the cerebral cortex. From a case of hæmorrhage of the thalamus studied by Probst, it appears that the thalamo-cortical neuron passes through the lamina medullaris externa to the side of the inner capsule, and, lying close to the ganglion lenticularis, reaches the median convolutions, the parietal lobes, and the gyrus fornicatus. Those fibres which go to the occipital lobe spring from the pulvinar and disperse in the stratum sagittale externum. Probst's results agree with those of Flechsig. According to Déjerine and Long, there is no distinct sensory system in the posterior limb of the inner capsule; the fibres which go to the cortex, as well as those going to the thalamus, mingle with the fibres of the pyramidal tract, which, beginning in the knee, spread to the retro-lenticular segment of the inner capsule. Hemianæsthesia occurs under two conditions—(1) a lesion of the thalamus opticus which may affect the ganglion in the passage of the fibres either on the bulbar or cortical side; (2) when the conducting tract between the thalamus and the cortex is affected, the thalamus remaining intact. In this case the lesion is of an extensive character.

Observations made both by the clinical and experimental methods prove that the motor functions, the cutaneous sensibility, and the muscular sense are localised in the same parts of the cortex—that is, in the motor zone, which ought to be called the sensori-motor zone.

Dr. Schaffer then gives a description of a case of hemianæsthesia, a labourer, æt. 18 years, who suffered for above a year from complete motor and sensory paralysis of the left half of the body. The loss of sensation, which approached the middle line, was complete. The sense

of position was wanting in the whole left side. The special senses were unaffected, but the intelligence was diminished, the patient answering questions sluggishly and in short phrases.

On examining the brain there was found softening of the right hemisphere extending from the posterior limb of the Sylvian fissure over the lower part of both median gyri to the first temporal. This softening dipped inwards to the head and body of the nucleus caudatus and the anterior limb and knee of the inner capsule. This had brought about atrophy of the thalamus opticus, which was not directly affected by the softening. There was also a descending degeneration of the pyramids implicating the pons, medulla, and lateral columns of the cord.

The degeneration was most marked in the dorso-lateral nucleus of the thalamus, showing that the cortico-thalamal neuron was affected. The professor observes that the lesion was confined to the motor portion of the inner capsule, while the back part of the posterior limb was free, although this tract, according to Charcot, conducted sensory nerve-fibres. In this case, while only the motor portion of the inner capsule was destroyed, there was hemiplegia with decided hemianæsthesia.

WILLIAM W. IRELAND.

Hypertrophy of the Brain with Alterations in the Thymus and Supra-renal Capsules [Wahre Hypertrophie des Gehirnes mit Befunden an Thymus und Nebennieren]. (Neurol. Cbl., Oct. 16th, 1902.) At the Meeting at Karlsbad in Sept., 1902. Anton, Obersteiner, Stekel.

Dr. Anton, of Graz, described a patient who was of a neurotic heredity, had severe attacks of epilepsy, but no symptoms of cerebritis, although there was a certain slowness in spontaneous movements. The intelligence was always good. He died at the age of twenty years in the status epilepticus. The outer vault of the skull was found to be as thin as paper, and even the bones of the base of the cranium were wasted. The occipital curve was flattened. The brain was of strikingly large size, and weighed not less than 2055 grammes. It was thus one of the heaviest on record. The hypertrophy was general, the proportions of the parts being preserved. For example, the cerebellum was 11 *per cent.*, as in the normal brains. The fissures were very deep, but the proportion of the grey and white substance was normal. There was some hydrocephalus internus, though not considerable. The thymus gland was larger than usual; its blood-supply came directly from the innominate artery. The muscular tissue of the heart was degenerated. Anton thinks that this might be the sequel of immoderate dosing with bromides. The supra-renal capsules were invaded by cysts so that the central substance was quite destroyed; the cortical substance remained, though pathologically altered.

Dr. Anton observed that persistent maintenance of the thymus gland and degeneration of the supra-renal capsules are frequently observed along with abnormal brains. In these cases, the cerebral functions are generally impaired. We do not know what relations these alterations

nave to one another. We should bear in mind the powerful constricting capacity of the supra-renal capsules, which might become the cause, not only of monstrosities, but also of other brain diseases, such as congenital hydrocephalus.

Dr. Obersteiner observed that hypertrophy of the brain is a very rare disease. He had a case of it in a boy æt. 8 years. There was no great impairment in intelligence. The brain, without the fluid of the ventricles, weighed 1920 grammes.

Dr. Stekel stated that he had observed in migraine a lowering of temperature to occur with some regularity. The same declension was observed in a case of sarcoma affecting the supra-renal capsules. He holds that the condition of the supra-renal capsules had a significance in migraine.

WILLIAM W. IRELAND.

3. Physiological Psychology.

A Criticism of the Applicability of Plethysmographic Curves in Psychological Questions [Zur Kritik der Verwendbarkeit der plethysmographischen Curve für psychologische Fragen]. (Zeit. f. Psychol. u. Phys. d. Sinnesorgane, H. 5 and 6, 1902.) Müller, R.

This lengthy and able paper presents an interesting study of the historical evolution of the plethysmograph, and then discusses the interpretation of its results. Lehmann's plethysmograph was used. Müller is not, however, like Lehmann, prepared to admit a psychological interpretation of plethysmographic curves, but considers that at present such interpretations are in a high degree confused and uncertain. However simply the plethysmogram may be obtained, its interpretation presents complex possibilities of error which involve some of the most debated points in the mechanism of the pulse. We are therefore yet far removed from the time when we shall be able to give a settled representation of the relations between psychic and circulatory processes. The schemes of C. Lange, Lehmann, and others are, Müller believes, without justification. Before we can take psychic elements into consideration we have, he argues, three different orders of physiological waves to allow for in interpreting the curve of the volume of the pulse: (1) the pulse-wave proper; (2) respiratory waves, and also waves which correspond to, and perhaps are, Traube-Hering waves; (3) S. Mayer's waves, which are of longer periodicity than the Traube-Hering waves. These waves are discussed at some length, and Müller severely criticises the statement of Lehmann that "those oscillations of the pulse which do not depend on the breathing or on muscular movement are of psychic origin." The paper deserves careful study by all who are interested in the psychological applications of the plethysmograph. It by no means follows, however, that the necessity of recognising waves of infra-cortical origin in the plethysmographic curve altogether invalidates psychological interpretations.

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