

tion, than about that of the cerebellum, and even if its presence could be taken as arguing a large vermis, it would still possess little or no psychological significance. (It must be said, however, that, in view of the progressive disappearance of this fossa in passing from the lower apes up to man, its presence is a valuable guide in estimating morphological rank.) He finds some portions of the skull to be somewhat masculine in character, and recognizes various deviations from symmetry. But while there are thus numerous anatomical peculiarities not corresponding to typical perfection, he does not consider that they warrant us in classing this specimen as pathological or atypic. The amount of study which has now been given to this skull is perhaps greater than even the fame of Charlotte Corday warrants, but it has certainly not been fruitless. It brings out clearly the difficulty of generalizing about so complicated an object as a skull. There appears to have been no discussion as to the presence of the various abnormalities; the question was merely as to their significance, as to how many abnormalities it takes to make an abnormal skull, or as to how many millimetres of difference constitute an abnormality. It is clear how much room there is here for individual taste and judgment to play a part, and that it is impossible to be too cautious in arriving at a generalization.

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### 3. *German Retrospect.*

By WILLIAM W. IRELAND, M.D.

#### *Soul-blindness.*

Dr. H. Lissauer ("Archiv. für Psychiatrie," xxi. Band, 1 Heft) details a case of soul-blindness (Seelenblindheit), and then sets himself to clear up our conception of what this deficiency really is. It is through the hope of this latter promise being fulfilled that I have pored through the fifty pages of the "Archiv.," and after performing such a task one feels reluctant to admit that his labour has been in vain. Munk, whose experiments first led to the conception of soul-blindness, believes that the power of receiving the impression from visual images as well as the seat of the memory of these images is located in the occipital lobe. Reinhard thinks that the perception of space and form is dependent upon the integrity of the superficial layer of the visual zone. Wilbrand assigns to one spot in the cortex the recognition of optical images, and to an adjoining part of the cortex the memory of such images. In the published cases describing the results following injury to the occipital lobe, there is noted a loss of visual power, but it is not clearly defined what this loss consists in. The case described by Lissauer was a man 80 years of age, of a neurotic constitution, but

good general health considering his age. He had suffered for two years from attacks of giddiness, and sometimes fell on the ground. The intelligence seemed on the whole to be well preserved, though there was some loss of memory, and in relating old stories he confused the sequence of time. There was presbyopia and complete right-sided hemiopia. The parting line of vision lay a little to the right of the fixation point, so that central vision was preserved in both eyes. The sense of colours remained good, and he could write quite well, but he had in great part lost the faculty of recognizing objects by sight, though when he was allowed to use his other senses he soon made them out. The vision of stereoscopic objects was destroyed, but when one needle was laid upon another he could tell which was the nearest to him, and he generally took the measure of objects correctly. The power of reading was nearly destroyed; he could not even read what he had written a short time before, and the capacity for drawing known objects was much impaired. The old man was interested in his own case, and readily lent himself to inquiries and experiments, the results of which are given in detail. For example, a candle was held before him; he said it was a drawing pencil, and at last made it out correctly. A clothes brush being shown to him, he said it was a cat, and it being objected that it was too small for a cat, he said it was an artificial cat. He then pointed out where the head, tail, and four paws were; but on touching it he at once said that it was a clothes brush. On being shown a cow and calf, he said it was a young and old animal; then he said "cattle." On being asked, Where is the head? he pointed to the hinder part of the cow. On being asked where the horns were, he indicated them correctly. On being shown a coffee mill, he said it was an ink bottle; but when the handle was turned he immediately recognized it. Being shown a picture of the Emperor William, he said it is "our Kaiser, the old one." He also recognized at once a picture of Napoleon.

I have taken these instances out of a list of seven pages without any intention of confusing the reader, but, indeed, it is very difficult to make out wherein lay the visual deficiency of this old gentleman. Dr. Lissauer's own interpretation is that his patient had no aphasia or paraphasia, and that the deficiency in vision was something quite different from dimness of sight. It consisted in a want of the power of recognition of seen objects, though the memory of visual images and the use of the other senses were not impaired. Dr. Lissauer distinguishes between what he calls apperception and mental recognition. He defines apperception as the highest grade of perception, in which the consciousness of a sensual impression has reached its utmost intensity. A further process consists in the comparison of the seen objects with former impressions, and the recognition of the relations of the seen object to other things in time or space, which, Dr. Lissauer tells us, is an act of association. Bearing this in mind, soul-blindness might consist in an

injury to the faculty of perception, or an injury to the power of association, through which the import of visual objects is recognized by the mind, or lastly, both these processes might be injured. Dr. Lissauer confesses that he scarcely expects to find pure examples of the two first forms. In connection with injuries to the brain, they may be either subcortical injuries implicating the optic tract and the optic ganglia, or cortical lesions of the visual zone in the occipital lobe, or transcortical owing to injury to the connections between the visual zone and other parts of the hemispheres. The first of these lesions may cause loss of sight or hemiopia, but not soul-blindness, which must be owing either to a cortical or transcortical lesion. He observes that the memory of images realized by the exertion of all the senses must be spread over all the cortex. This would hold good of the conceptions of space and form which are not wholly deranged from visual impressions.

Dr. Lissauer considers his case one of transcortical blindness, as the power of recognition was greatly impaired, while that of perception did not suffer so much. As the case did not come to a post-mortem examination, the actual lesion was but a matter of inference.

Dr. Lissauer tries to lay down all the possible categories into which the impaired faculty of recognition of visual objects might fall. There is, he observes, so much relation between the object and the conception that we can understand how the error in representation could have arisen.

(a) There may be a resemblance in form, as when a pencil is mistaken for a candle, or a paper basket for a wicker one.

(b) There may be a resemblance in some particulars, as when one mistakes the image of a swan for that of a giraffe, owing to the length of the neck, or when one takes a maned lion for the picture of a wild unshorn man. It might also be that the patient drew wrong conclusions from what he saw, that he was misled by false inferences from optical impressions or from false images drawn from a perverted memory.

(c) Where there is some internal correspondence without external likeness, as when a bunch of grapes is taken for a pear, the idea of fruit being common to both. This was not often observed, but sometimes the patient would name an object rightly, and then hesitate and guess at something else, as when he named a watch, and then said it was a watch holder. Sometimes illusions were observed, as in the case where he thought the hair-brush to be a cat. This looked as if around the real object there gathered images of an imaginary object, and the patient judged wrongly, because he saw more than he really should have normally done.

*Another Case of Soul-blindness.*

Dr. Siemerling's paper, in the same number of the "Archiv.," at least shows us how complicated the subject is. He observes

that cases of soul-blindness, as described by Munk, are extremely rare. At first he thought the case described by him might prove one instance of it; but a more careful study showed some marked differences.

The patient was a labourer, 54 years old, a steady, healthy man. In the middle of December, 1888, he was aware of a dimness of sight, with giddiness and heaviness in the right arm. He thought that he could see better with the left eye. On the first of January he complained that sight with the left eye was also becoming difficult. There were no other symptoms save a slight failure of memory.

On admission to the Charité, at Berlin, on the 7th of January, there was found to be no aphasia or paralysis, and his understanding seemed to be good; but he had lost the power of seeing flame or colours. He saw everything in dark or shade, like in a photograph. Objects held out before him, as a key or a candle, he recognized with difficulty. He wished always first to handle them. On examination of the eye there was found to be some emmetropia on both sides, and right-sided hemiopia on both sides, which, however, was not equal in extent. In the right eye the deficiency of vision slightly passed the middle line; on the left side it was smaller. There was some mental dulness with deficient memory. After being eight days in the hospital, he said he had been only one day. He persistently complained of bad sight, and used the sense of touch to distinguish objects. Careful experiments were made, in which regard was paid to the existence of hemiopia. It was ascertained that the patient had lost the capacity of reading, and had some difficulty in writing, but the most marked deficiency was the total loss of the sense of colours. He had never previously been colour-blind. Under the use of iodide of potassium the dimness of sight in part passed away, and the colour sense in part returned, first that of blue, then of red, then of green; but the right halves of the retinæ remained hemiopic. Along with the improvement in the sharpness of vision, the symptoms of soul-blindness vanished. The patient was able correctly to name the objects which he saw, and the agraphia and alexia disappeared.

Dr. Siemerling, in conjunction with Dr. König, now resolved to try some experiments with a view to determine the nature of the so-called soul-blindness. Through dimmed glasses a vision of  $\frac{1}{30}$  was obtained, and the light in the room in which the objects were exposed was rendered monochromatic by natrium light. Dr. Siemerling now found that he was in much the same condition as his patient; he was unable to recognize single objects held before him. He knew that there was something, and had a conception of its size, and felt the desire to handle it in order to ascertain what it was. Thus through monochromatic light and artificial dimness of vision he was able to induce a condition similar to soul-blindness. Dr. Siemerling is inclined to think that the lesion

in the patient described must have involved both occipital lobes. It was thus not a case of soul-blindness, but of partial cortical blindness. Willard holds that the recognition of a seen body and the formation of an image of it in the memory are two distinct mental processes.

At present there is little unity in the conception of the symptoms of soul-blindness. Many of the patients studied are more or less deranged in mind, some even in a condition of dementia, so that examinations as to the diminution of sight or the perception of colours are carried on under difficulties. Nor can the experiments on animals on which the doctrine of soul-blindness was built up give us clear results as to the sharpness of vision and the sense of colour, factors which, as we have seen, are of importance in the consideration of the affections of vision that may go on under the name of soul vision. Dr. Siemerling cites Charcot's and Wilbrand's cases as good instances of real soul-blindness in the sense that Munk described it. In neither of these cases was the sharpness of vision or the perception of colour injured to any notable degree, but in both there was a loss of memory of the images of seen objects.

In conclusion, Dr. Siemerling cites a case observed by Schoeler Uthoff similar to the one described by himself. The patient was suddenly seized with severe headache and tendency of blood to the head, so that the face assumed a dull red hue. He became blind in both eyes. This lasted for 24 hours, after which the power of sight returned so that he could see objects dimly. On further examination it was found that he had complete right-sided hemiopia, and in the upper part of the left field of vision there were two spots of scotoma. The perception of colours was lost in both eyes. The sight continued to improve, though the hemiopia remained and the perception of colours did not return. The patient died a year after "of a complication." A case was also described by Steffan, in which the power of sight and the field of vision suffered no injury, but a total colour-blindness invaded both eyes.

*Cortical Hemiopia with Degeneration of the Optic Nerve.*

This is a case taken from the "Archiv. für Augenheilkunde," Band 19, and reported in the "Neurologisches Centralblatt," 15th January, 1890, of a man 33 years of age, who in his ninth year lost the sight of his left eye. In February, 1882, he received a blow with a spade which fractured the right temporal bone. The dura mater was torn and driven in. Several pieces of bone came away, and there was an abscess in the brain which required opening. The patient was comatose, and there was a transient paralysis of the left arm and leg. The wound healed in May. When the patient regained consciousness he remarked a loss of visual power towards the right, and on examination there was found nasal hemiopia

which lasted till the death of the patient. In the central papilla the power of vision remained normal, though a small portion of its under border seemed to become paler in the course of years. Towards the close of the patient's life the action of the pupil to light thrown upon the temporal side of the retina became less marked. After the wound healed the man returned to his business. He noticed that the feeling in the left hand was somewhat diminished. He sometimes felt warm in the head, otherwise there were no cerebral symptoms.

The man died in September, 1887, of consumption. On examination after death there was a tight cicatrix at the posterior portion of the right temporal bone, under which there was some wasting of the convexity of the brain implicating the cortex, and at one place some of the white substance, so that the greater portion of the temporal convolutions were destroyed or had become grey and sclerotic. The right optic nerve where it passed through the foramen was pale white at the one side, and grey in the rest of its calibre. On microscopic examination the tissue was found to be atrophied more or less throughout its whole extent of the nerve. A very attentive study of the atrophied and sound portions of the optic nerve confirmed views already laid down by previous observers of the position of the nerve fibres. In the neighbourhood of the eye the fibrous bundle lies at the temporal side of the nerve trunk. The fibres of the temporal side of the retina lie at its upper and under circumference. The fibres of the nasal side of the retina occupy the centre and middle third of the inner circumference. These bundles afterwards change their position during the backward course of the optic nerve. The assertion that the fibres which do not cross lie upon the right side of the nerve was not borne out by this case. The author explains the gradual diminution in the reaction of the pupil by the consideration that at first the optic nerve fibres remained healthy up to the corpora quadrigemina, but in time became degenerated.

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#### 4. *Therapeutic Retrospect.*

By HARRINGTON SAINSBURY, M.D., M.R.C.P., Physician to the Royal Free Hospital.

##### *Spermin and Piperazidin.*

Brown-Séquard asserted, in 1889, that testicular extracts (from young animals) exerted marked stimulating powers on the nervous system when injected subcutaneously. His statements were confirmed by numerous observers. No bad effects resulted, but certain local manifestations suggested the separation of the base spermin, present in the testicular extract, and the use of the base