

PHILADELPHIA NEUROLOGICAL SOCIETY.

Stated Meeting, October 23, 1893.

The President, Dr. CHARLES K. MILLS, in the chair.

UNILATERAL SWEATING OF THE FACE AND
NECK IN A PROBABLE CASE OF POSTER-
IOR SCLEROSIS OF SLOW DEVELOP-
MENT.

Dr. MILLS exhibited to the society this patient, E. R., 56 years old, white, who dates the beginning of his present troubles to an attack of grip three years ago, although this origin may be regarded as doubtful. He began to have what he termed rheumatic attacks in the legs; pains coming and going, but without any joint swellings. He does not describe his pains as having been shooting or lancinating, but rather as decided aches. Five or six times, however, during the last three years, he has had attacks of extremely sharp cutting pains across the left half of his chest, chiefly about the precordial region. These pains come in storms of agonizing severity, and he says that when the attacks are on he becomes delirious through his sufferings; as described, they correspond closely to the so-called "crises" of posterior sclerosis. In 1891, he was examined by Dr. John E. Carpenter, who again examined him a few days ago, and who reports that the same conditions are present now as then, namely, Argyle-Robertson pupillary reaction; constant myosis; poor vision brought up to normal by high astigmatic correction; ocular movements normal, and no signs of optic atrophy. Knee jerks are practically abolished, although a slight jerk can be brought out on the left with reinforcement; muscle jerk is present on the right, but absent on the left. His station is good and he has no ataxia of arms or legs. He presents the very curious feature of unilateral sweating on the left side of his face and neck. At times he also has a slight flushing or blushing of this side of the face. The case seems to point to an exceedingly prolonged first stage of posterior sclerosis. The unilateral sweating and blushing may be due to a patch

of sclerosis in the cervico-dorsal cord; or in the posterior ganglia, or perhaps in the left cervical gangliated cord. The case, in so far as the unilateral sweating and chest pains are concerned, recalls one presented to the society a few years since, which eventually proved to be thoracic aneurism; but, examination of the chest in this case is negative, and the combination of symptoms points to spinal degenerative disease.

Dr. MILLS also exhibited a case of MIRROR-WRITING. (see page 88).

DISCUSSION.

Dr. G. BETTON MASSEY.—A patient of mine, an artist, saw the programme of this meeting and asked what was meant by mirror-writing. I explained, and he remarked that he thought that he could do that. I have here a series of simultaneous both-hands writing which he did.

The first exhibit consists of words written simultaneously with each hand in the proper direction.

In the second, the right hand writes the word properly, while the left writes it reversed.

In the third, the right hand writes upside down and reversed, and the left hand upside down and backward.

In the fourth, one word is begun from the right and written upside down and another from the left upside down, backward and reversed.

Dr. F. X. DERCUM.—I find like Dr. Taylor, that I can without difficulty write in the reversed direction with the left hand, but if I attempt to produce mirror-writing with the right hand, it is accomplished with great difficulty. There seem to be physiological and anatomical reasons why mirror-writing should be adopted by children in whom the right brain has apparently assumed the principal functions of the left brain.

Dr. JAMES HENDRIE LLOYD.—I would suggest that the physiological action of the flexors and extensors of the arm probably has as much to do with the form of writing as anything else. In writing, the arm rests on the ulnar side. Hence the line or direction of least resistance, as it may be called, is away from the median plane of the body. So, too, the inclination of the letters will be fore-hand or back-hand according as the pen is held in the right or left hand. This is due to the nat-

ural action of the flexors and extensors of the hand when the arm rests on the ulnar side with the elbow-joint as a centre.

DR. S. SOLIS-COHEN.—In the Hebrew and some other ancient forms of writing, the characters are made from right to left. The reason probably is that the original crude-outline pictures were engraved on the rocks and on blocks of stone, the chisel being held with the left hand and the mallet with the right, and thus the natural method of progression was from the side on which the blow was struck, *i. e.*, right to left. When these characters were subsequently transferred to parchment or papyrus, the same direction was followed. If I am correct as to the reason for its original adoption, the fact, I think is in the line of Dr. Taylor's thought, that the mirror-writer goes from right to left, because that is the direction in which the left hand is most easily carried.

DR. F. X. DERCUM.—We have here something more than writing from right to left. We have in addition a reversal of the form and position of the letters.

DR. A. A. ESHNER.—I think that Dr. Mills in speaking of the natural tendency to centrifugal movement, at one point in his paper, brought out the explanation of this peculiarity of the hand-writing. The ordinary motions of the hands are made in the direction of least resistance, that is, those of the right towards the right, and those of the left towards the left. The phenomenon must be purely a motor one of the co-ordinative mechanism. In writing with the left hand it would seem easiest to transfer to that side the same sequence of stimulation and movement, as ordinarily occurs in using the right hand for the same purpose. That the peculiarity is essentially one of accommodation, would seem to receive support from the fact that, persons who write with the left hand and have their central hemispheres intact, slant the letters in the same direction as this boy does. In the latter, however, the governing mechanism is sufficiently well organized to overcome the natural tendency to compensatory aberration.

DR. CHARLES K. MILLS.—I think that the suggestion of Dr. Taylor that any one can write in this manner, would, on experiment, be found to be incorrect. While it is true that Dr. Taylor can do this, we must remember that while not ambidextrous, he has a certain use of both sides of his brain which is not possessed by the average man. Dr. Taylor is also an artist. In my paper,

I have referred to the various explanations that have been given and also mention Hebrew writing. This is not the same as mirror-writing. Looking at Hebrew written in the mirror, would not give you the normal appearance of the letters. In the discussion too little stress has been laid upon the functioning of local areas of the brain itself, and upon the question of the formation of word images in the brain and the peculiar manner in which the consciousness of the image is registered upon the child's brain. This boy's left hemisphere is probably out of use. It would be interesting to know exactly how the word image appears in his consciousness.

Dr. S. SOLIS-COHEN.—In discussing the question of natural writing we must consider the effect of imitation. If we were to take a world of left-handed people, probably all of the writing would be what we term mirror-writing. If then, a right handed man came among this people, his writing would be mirror-writing to them, unless he attempted to imitate their letters exactly, in which case his writing would have a backward slant. When a left-handed person comes into our world of right-handed people, he either writes mirror-fashion, as in the case cited by Dr. Mills, or he attempts to imitate the usual writing, and gives a back-handed slant to his letters. Coming back to those languages in which the writing is from right to left, of course the writing is not mirror-writing. It is not a reversal of itself. The question is, why does it take an awkward and apparently unnatural direction? The answer is that it was not originally unilateral dexter-handed writing upon parchment or other smooth surface, but a process of sculpture, requiring the use of two hands. The graving instrument being held in the left hand, the letters followed the natural line of the movement of that hand; the letters were thus cut from right to left and when imitated on parchment, were imitated in the same direction. It is significant in this connection that in such ancient writing there is no cursive hand. The letters are set down one after the other, by what is virtually a process of drawing and painting. It might not be impossible for right-handed persons to develop an alphabet or method of writing in which letters running into each other should require the hand to move from right to left, but it evidently was not readily developed as it does not exist. Again, in some of our present Roman characters, we

can trace mirror-pictures of the Semitic characters from which they have been derived. This seems to be because the right hand found it easier to make them reversed than like the original, just as most children and illiterate persons reverse the Roman S, making it 5.

Dr. WHARTON SINKLER.—It seems to me that there is something more than a mechanical difficulty in these cases. I recently saw a boy who is a little retarded in his cerebral development. He has been taught to read in words of three or four letters, but when he is tired, it frequently happens that he pronounces a word backwards, for instance the word "ton" may be pronounced "not," or the word "so," "os." That is evidently a defect in cerebration and not a mechanical difficulty. It seems to be an analagous condition to mirror-writing.

Dr. A. A. ESHNER.—In Dr. Sinkler's case, but a single visual impression was made upon the brain, and the direction in which it was viewed is of secondary significance, while in the case of Dr. Mills there are two distinct visual impressions. The boy sees the one picture and, through the motor mechanism, reproduces it in the simplest way.

Dr. J. MADISON TAYLOR.—It does not seem to me that mirror-writing can have a large significance, for writing with the left hand is not a difficult feat, provided that one writes in that fashion, viz., from right to left—reversing all the letters. I find that I can do this readily and rapidly, and do so on the blackboard before you. And further, the peculiarities of chirography are essentially my own. To write correctly from left to right is far from easy, however, and the result does not resemble my usual characters.

It would seem that to write at all with the left hand, to imitate the ordinary script of a right-handed person, one forms letters in a natural and easy *reversal* of the usual curves and lines pursued by the right hand, which have only become so by long pursuance of similar methods, and one of which comes the commonly accepted shapes and turns. And that as the left hand forms the curves there is merely a following along the lines of least resistance. For instance, it is a usual and an easy exploit to take two bits of chalk, one in each hand, and to draw a figure which has similar curves, as a butterfly with outstretched wings,—the two sides of the figure can be swiftly made by each hand at the same time.

Except for a lack of familiarity in holding a pen in my left hand, I can write very readily in imitation of the mirror-writing, and yet I trust no abnormality exists in my motor centres. On the contrary, I should infer, that my motor centre nerves were rather nimble to enable me to imitate my right-handed and accustomed methods by my left hand and reverse motor centres.

In the boy here exhibited, there may be right-handedness uncultivated, because his right arm has suffered damage; hence, he makes an unconscious selection in the easiest method of imitating this by his left hand, working at his greatest ease which is a reversal of direction and curves. He may be dimly aware of this, but his lack of intelligence prevents his being able to describe why he does so.

Dr. J. MADISON TAYLOR read a paper on
EXOPHTHALMIC GOITRE.

DISCUSSION.

Dr. G. BETTON MASSEY.—It seems to me that too much stress is laid by the reader of the paper, upon the thyroid portion of the disease, and also upon the positive relation of the sympathetic nervous system to the affection. The clinical studies that I have made, show me plainly that the sympathetic system has rather a negative relation to the disease. It is true, there is a relative over-action of the sympathetic system, or a loss of balance, but may not this loss of balance be due to a parietic neurosis of the spinal centre?—a mere prominence of the sympathetic vasomotor activity, by reason of its not being held properly under control by the opposing system. Hence, it is not a disease of the thyroid, and thyroid juice is hardly a method of curing so general a disease.

I agree with Dr. Taylor, that this is a far more curable disease than ordinary enlargement of the thyroid gland. I have seen several cases cured. Quite a notable one was sent to me in 1881, by Dr. Mitchell, for electrical treatment. The patient was a young lady with prominent eye-balls, a pulse of 140, and quite prominent thyroid. Under treatment continued for two years, she recovered not only from the affection of the heart, the pulse going down to 80 and losing its peculiar swelling character, but the eyes became normal in projection, and the gland very slightly above normal in size.

I think that the doctor, while enumerating many valuable means of treatment, dwelt too lightly on the use of the galvanic current. The use of the galvanic current presents possibilities of propriety and impropriety far greater than any other single therapeutic agent. We should not lightly say that a certain definite use has exhausted its possibilities. The case to which I have alluded was treated entirely by gentle galvanic currents applied both to the cervical region of the spinal cord and to the gland itself. In later cases, I have added to this, very heavy currents to the spinal region, with one pole at the pit of the stomach. I am quite convinced that the aberrant spinal impulses which fail to control in this disease, are directly stimulated by this treatment. I have seen the pulse go down immediately after the application. (Adjourned).