A WOMAN BLIND FROM BIRTH WHO ACQUIRED SIGHT AT 22 YEARS OF AGE

BY

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Very few cases have been reported of a person who, blind from birth, has obtained sight in adult life. I have been able to find records of only four cases, although I have no doubt more may have been published.

I saw this girl for the first time on March 8, 1932. She had been blind from birth as a result of congenital cataract, and had been educated at a blind school from 10 to 19 years of age. No operation on the eyes had been performed.

Condition of Eyes before Operation

On March 8, 1932, she could distinguish light from darkness with each eye, and could tell when an object was moved in front of her face, especially if a bright light was behind the object. The projection of light of both eyes was good. They exhibited marked nystagmoid movements, best described as "shuddering." There was convergent strabismus, possibly the right eye being the one more usually turned in. Both lenses were completely opaque. Slight epiphora was present, the lacrimal sacs having been removed during childhood. There was no history of blindness in the family, and she was the only blind member out of seven children.

Condition when Blind

Before the operations she was a totally blind person earning her living as such. She was unable to get about without assistance, and had to be led when not in her own home, except for the fact that she used occasionally to visit a friend's house and a shop about two minutes' distance, to reach which it was not necessary for her to cross a street. She had never seen a human face, a flower, a motor car, or anything which a sighted person takes for granted. All her ideas about the world had been obtained from reading braille, from information given to her by others, and by the use of her other senses. She had scarcely any preconceived ideas of things which she could not feel. When reading in braille she took no interest in the description of things or places, but only what people said and did.

The other senses were well developed. She had very acute hearing—better than the other members of her family. Similarly, her senses of smell and touch were very good. She says she was unable to detect the presence of a person in a room if he kept absolutely still, but could recognize members of her family by their cough, the way they walked, etc.

While at the blind school she had learnt braille, which she can read fluently. She had been taught machine knitting and chair-seating as well as the ordinary school subjects—English, history, geography, music, and arithmetic up to fractions and decimals, etc. She was very happy while at the blind school, as, being with blind people, she did not realize any disability, but on returning home she felt her position in comparison with those with sight. After leaving the school she worked at home at

knitting and chair-seating. She came to consult me in the hope that something could be done for her.

Operative Measures

Both lenses were needled several times, and a curette evacuation was performed on the right. Later the capsules were needled.

CONDITION ON DECEMBER 8, 1937

Right eye: Vision with + 15 D sph. and + 1 D cyl. axis $60^\circ = 3/60$; add + 4 D sph., reads J 12 with difficulty. Left eye: Vision with + 16 D sph. and + 1 D cyl. axis $135^\circ = 6/60$; and + 4 D sph., reads J 8. Both mediae are clear and the fundi appear normal. Horizontal nystagmus is present in both eyes, but far less marked than before the operation. The axis of the eyes is usually parallel; but occasionally one eye, usually the right, is turned in.

On account of the type of the operations performed her vision returned only very slowly—from appreciation of light through blurred vision eventually to seeing things reasonably well with the aid of glasses. Having built up a world of her own it is very difficult to appreciate her thoughts on being presented with the sight of the ordinary things of life.

Psychological Observations after Operations

PERCEPTION

On gradually obtaining her sight the first thing she noticed was a white apron worn by a nurse, then the red colour of a dress. Next she saw a window and a doorway. The window had no shape, but appeared as a bright area, and the sky white. Later she saw her hands and fingers, but could not distinguish her nails. After this she saw chairs and tables. Then she saw a face. The second colour she noticed was green, and the other colours later. She had to be told the name of each colour. Even now she has difficulty with some of the different shades.

When she first saw a building it appeared a dark object with no shape. After she got her glasses buildings looked huge, but she had no preconceived idea of their shape or the appearance of the different types. She did not recognize a church, although she knew that it had a tower or steeple, but this did not convey anything to her. She had read descriptions of different things, but did not appreciate what they were going to look like.

At first she had no estimation at all of distance, and could not judge the position of objects in relation to herself. Cars seemed to be coming straight at her, and people appeared to be walking into her. She still occasionally thinks a car is coming straight at her; but she can cross roads, and is usually able to tell how far away a car is and whether it is safe to cross. In going upstairs she could not judge the height of steps, and sometimes raised her foot too high. She fell both when going upstairs and when coming down. Even now if stone steps are wet she has some difficulty. When blind she did not bump into a door, but when she first relied on her sight she did so—similarly with tables and chairs. She could see the doorway, but had no idea of its relation to herself: she could not tell how far away it was. Now, however, she has no difficulty in avoiding objects.

At first she had no appreciation of solid objects, probably the outline only being seen. She had no perception of form. She thinks that at first she could not have told a brick from a ball except by touch, but is able to do so now; and she can also appreciate depth and can distinguish a solid object from a flat one. Also, in the blind state she had no knowledge of the relative size of different

things, and on seeing objects such as houses for the first time they looked enormous. She thought some animals were much larger than she found them to be when she went to the Zoo. She had imagined that bears were as large as elephants, and the latter much larger still. Cats and dogs did not appear larger than she expected, probably because she had touched them when blind. She knew that dogs were of different sizes. Looking at a cat and a dog of the same size she could not distinguish one from the other unless the dog barked, but she could do so quite easily by touch. Objects which she could feel she was able to recognize, and thus learn to know by sight.

She is intelligent and has a good memory. She has asked many questions, and on being told what things were she has remembered. Looking out of the window at the Bath Eye Infirmary she saw an object going up the road outside. She knew it was some kind of motor vehicle as she had previously seen cars, but this was different. On describing it to another patient she was told that it was a motor van. Similarly with all the objects she saw—she had to learn what they were.

Faces at first looked alike, but she is now able to distinguish one from another. She was greatly disappointed with faces, as she said she had thought all people were beautiful and had "happy-looking faces." In looking at a print or photograph she has difficulty in telling the foreground from the background. Coloured pictures at first appeared just a mass of colour, but now she is able to a large extent to make out the subject of the picture. She likes bright things, and thinks flowers are beautiful.

She is a fluent braille reader, but of course did not recognize the ordinary printed word or figures, and had to learn the ordinary alphabet and figures before she could read the printed and written word.

As she did not understand what she was looking at she made progress by: (1) asking questions; (2) recognizing things by touch and then by sight; (3) recognizing things by smell and touch—for example, the different flowers, where of course colour helped; (4) recognizing things by knowing what she had read or been told.

VISUALIZING, ASSOCIATION, ETC.

She had no visual images until she obtained her glasses. The association of ideas in a person who has never seen are by sound—including sound of words—touch, and smell. Thought in the blind state is mainly word-thinking, but in the sighted it is mainly picture-thinking. Her association of ideas is now that of a sighted person—that is, dependent on visual images. She is able to describe objects which she has seen earlier.

At first she was very depressed and wept a lot—in fact, she must have gone through a great emotional strain. Probably she had not realized that she would have to learn all about visible objects, and more or less start again at the beginning. She was, so to speak, between two worlds. Eventually, as time went on, she gained confidence as her vision improved and her sighted knowledge increased.

On March 30, 1936, she obtained a post at a factory, starting at 10s. a week. After three months her wage was raised to 12s., at six months to 14s., and at a year to 16s. Now she is earning 19s. a week. Normally a girl leaving school starts at the age of 14 years at 10s. a week, rising to 18s. at 16.

Before the operations she had to be brought from her home to see me in Bath, but now she can find the way by herself, travelling by bus and walking to the Eye Infirmary.

She has joined the local company of rangers, and does the ordinary field work and plays games, but has difficulty in catching a ball. She can do general housework, dusting, polishing floors, and making beds; and when washing up does not break more things than a sighted person. She has not yet done any cooking. She goes to the cinema, and on her holidays enjoys sea-bathing. She watches her friends playing tennis, but cannot play herself as she cannot hit a ball with a racket. Although she can write well and read the printed word, she still finds it quicker to read braille. She has also visited London—seen Madame Tussaud's, the Zoo, and the theatres, etc.

More detailed psychological studies are being undertaken, and will be published later. There seems no doubt that, at least in the case of a person of the intelligence of the present one, it is possible for a previously blind person to make a fresh start in life as a sighted person, though in some of the cases described this has proved too hard a task.

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MOULDS AND ASTHMA

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In a previous communication (1934) I published a list of allergens which had given rise to positive skin reactions in 522 cases of asthma observed by me in Germany. Of these patients 290 were males and 232 females. The reactions most often obtained were those given by extracts of house dust, bed feathers, and mattress stuffing. The next most frequent reactions in this series were those obtained from bacteria (108, 20.7 per cent.) and moulds (84, 16.1 per cent.). This latter figure is almost identical with Hansen's figure of 15 per cent. given in his record of asthma cases in Germany.

Storm van Leeuwen was the first to suggest that moulds, especially *Aspergillus fumigatus*, *mucor*, and *penicillium*, play a part as "miasms" in (a) climatic or (b) house allergens. In my own observations the patients were usually tested with *aspergillus*, *penicillium*, and *mucor* extracts, the original cultures being made from the residence of asthmatic patients.

More recently a number of papers have been published in the United States on the problem of moulds as a cause of asthma and hay-fever. Some of these investigations deal with mould extracts as supplied by the Arlington Chemical Company, who made preparations of four types of *aspergillus*, and one type each of *alternaria*, *chaetomium*, *monilia*, *mucor*, and *penicillium*; in all, nine different types. With these extracts Lamson and Rogers (1936), working in Los Angeles, found that of 1,259 patients tested 154 gave positive skin reactions (12.2 per cent.). Of these, sixty-six were positive towards *alternaria*, twenty-four to *chaetomium*, twelve to *Aspergillus fumigatus*, and fifty-two to others. On the other hand, Balyeat (1932), who carried out his investigations in Oklahoma, found that only 1 per cent. of 480 patients gave reactions towards moulds. Feinberg (1935), working in Chicago, found that sixty-eight patients out of a total