

Jackson's work without pointing out the great debt that both neurologists and psychiatrists owe to his work. I always feel, however, one regret, and that is, that his close, logical mind was not associated with fluency of expression, for, as I have already said, a great deterrent to those wanting to study Hughlings Jackson's works lies in the difficulty of following them. However, one has to be thankful that he has left so much, although he may have left no single volume as a record.

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*Hallucinations in the Sane.* By ROBERT HUNTER STEEN, M.D.Lond., M.R.C.P.Lond., Medical Superintendent, City of London Mental Hospital, near Dartford, Kent, and Professor of Psychological Medicine, King's College Hospital, London.

IN insanity hallucinations are frequently present. This is no recent observation and has been duly noted in the literature since the dawn of medicine. Hippocrates, Asclepiades, and Celsus make mention of them in their writings.

Burton in the *Anatomy of Melancholy* <sup>(1)</sup> says: "If it [melancholy] be extream, they think they hear hideous noyses, see and talk with black men and converse familiarly with devils, and such strange chimeras and visions (Gordonius), or that they are possessed by them, that somebody talks to them or within them."

Different authors give varying percentages of those affected. Esquirol says 80 *per cent.* which is a higher average than most observers will allow, still, there is no doubt of the great

prevalence of the symptom. Seeing, then, that the insane are so prone to hallucinations, is it a fact that all those who have hallucinations are insane? Without giving due thought many might be inclined to say "Yes." When, however, the literature is consulted it is surprising to find how widespread is the existence of hallucinations among those whom no one would call insane, and it has been a matter of the greatest difficulty to keep this paper within moderate limits. Space also has demanded the exclusion of a detailed discussion on the fascinating subject of the theory of hallucinations. This will be referred to only in the summary at the conclusion.

Nevertheless, to present the matter in an orderly fashion several headings have been made and, though in a measure trespassing upon the province of theory, they must be regarded as only provisional.

Two main divisions are necessary: (A) Hallucinations the result of agencies operating upon the brain or nerves. (B) Hallucinations of mental origin.

The following table gives the sub-divisions:

- (A) Hallucinations the result of causes operating upon the brain or nerves.
  - (1) Toxins.
  - (2) Disorders of the brain circulation, *e.g.*, anæmia, congestion, etc.
  - (3) Disease of end-organs.
  - (4) After-images.
  - (5) Brain diseases of obscure pathology, *e.g.*, epilepsy, migraine.
- (B) Hallucinations of mental origin: Those in which so far as our present knowledge goes a physical agency is unknown.
  - (1) Suggestion.
  - (2) Hypnotism.
  - (3) Crystal gazing, clairvoyance and clairaudience.
  - (4) Hysteria. Somnambulism. Multiple Personality.
  - (5) Hypnagogic visions.
  - (6) Dreams.
  - (7) Hallucinations in history.
  - (8) Collective hallucinations.
  - (9) So-called telepathy.
  - (10) Hallucinations the result of a complex.

## (A) HALLUCINATIONS RESULTING FROM PHYSICAL CAUSES.

(1) Toxins may be introduced from without, *i.e.*, exogenous, or produced by the patient, endogenous.

(a) *Exogenous toxins*.—Probably the drug which has been used more than any other for the purpose of experimentally producing hallucinations is *cannabis indica*.

Brierre de Boismont<sup>(2)</sup> describes a *séance* at which he was present in company with Esquirol and others when several men were given a drink supposed to consist principally of *cannabis indica*. One of these, B—, a painter and musician, besides other symptoms had the unilateral hallucination of hearing music in one ear while he heard ordinary speech in the other. Another of those experimented upon saw “objects which had no existence”<sup>(3)</sup>.

Mescal button is a drug largely used by the Indians of New Mexico. The effects produced upon himself are thus described by Weir Mitchell<sup>(4)</sup>. He saw all sorts of beautiful colours and then “a white spear of grey stone grew up to a huge height and became a tall richly finished gothic tower of very elaborate and definite design, with many rather worn statues standing in the doorways or on stone brackets.” He later saw an apothecary’s shop. “On the left wall was pinned by the tail a brown worm of perhaps a hundred feet long. It was slowly rotating like a catherine wheel nor did it seem loathly. As it turned, long green and red tentacles fell this way and that.”

The abuse of opium has also been responsible for hallucinations. Thus De Quincey writes<sup>(5)</sup>: “In the middle of 1817 this faculty became increasingly distressing to me; at night, when I lay awake in bed, vast processions moved along continually in mournful pomp; friezes of never-ending stories drawn from times before *Œdipus* or *Priam*, before *Tyre*, before *Memphis*.”

Lauder Brunton<sup>(6)</sup> gives a good example of the influence of salicylate of soda. “In the case of an old gentleman who was taking salicylate of soda both his friends and I were much alarmed by the patient describing processions of people round his bed, when, with the exception of a single attendant, no one was in the room.”

The effect of quinine in producing singing in the ears is well known.

Quite a long list can be made of the different drugs which can produce hallucinations: Alcohol, absinthe, ether, stramonium, belladonna, hyoscyamus, nitrous oxide, chloroform, mercury, lead, and santonin.

(b) : *Endogenous toxins: Toxæmias.*—There are numerous records of hallucinations occurring in diseases accompanied by pyrexia. These have been omitted as the hallucinations are only a part of the febrile delirium.

Gout may cause hallucinations. "I was called," says Dr. Alderson, "to Mrs B—, a fine old lady about 80 years of age whom I have frequently visited in fits of the gout. She complained of an unusual deafness, and great distension in the organs of digestion, leading her to expect an attack of gout. From this time she had visions. She was visited by several of her friends, whom she had not invited; she told them she was very sorry she could not hear them speak, nor keep up conversation with them; she would, therefore, order the card table, and rang the bell for that purpose. Upon the entrance of the servant, the whole party disappeared. She could not help expressing her surprise to her maid that they should all go away so abruptly; but she could scarcely believe her when she told her that there had been nobody in the room. She was so ashamed, that she suffered for many days and nights together the intrusion of a variety of phantoms, and had some of her finest feelings wrought upon by the exhibition of friends long lost, and who had come to cheat her fancy and revive sensations that time had almost obliterated. She determined, however, for a long time, not to complain, and contented herself with merely ringing her bell, finding she could always get rid of the phantoms by the entrance of her maid. It was not till some time after that she could bring herself to relate her distresses to me. She was all this time convinced of her own rationality, and so were those friends who really visited her, for they could never find any one circumstance in her conduct and conversation to lead them to suspect her in the smallest degree deranged, though unwell. This complaint was entirely removed by cataplasms to the feet, and gentle purgatives, and terminated a short time afterwards in a regular slight fit of the gout. She has remained ever since, now somewhat more than a year, in the perfect enjoyment of her health and faculties" (1).

(2) *Disorders of the brain circulation.*—*Anæmia.*—In

convalescence from acute illnesses when the patient is still weak hallucinations may appear. Also in cases of heart disease. "A non-commissioned officer with hypertrophy of the left ventricle imagined he saw white phantoms of strange and indefinite forms place themselves before him in threatening attitudes. Ashamed of his fears, knowing himself that it was only a phantasma, dreading above all things the jokes of his companions, he dared not confess how much he was under the influence of the strange malady which tormented him" (8).

*An example from a case of drowning.*—"A gentleman fell accidentally into the water and was nearly drowned. After being rescued he continued in a state of apparent death for nearly twenty minutes. After his restoration to consciousness he thus describe his sensations whilst in the act of drowning. 'They were the most delightful and ecstatic I have ever experienced. I was transported to a perfect paradise and witnessed scenes that my imagination never had in its most active condition depicted to my mind. I heard the most exquisite music proceeding from melodious voices and well-tuned instruments'" (9). Instances are on record in which apoplexy has been heralded by the appearance of hallucinations.

(3) Disease of end-organs are often the source of hallucinations. One example will have to suffice on the present occasion.

Mr. Tatham Thompson has recorded a most interesting case of a lady who came to him because she saw the head and horns of a goat constantly before her. On measuring her field of vision with a perimeter he found there was a blind spot corresponding to the figure she had described, and this was due to the bursting of a blood-vessel in the eye and consequent injury to the retina (10).

(4) *After-images.*—Dr. Hack Tuke describes some remarkable hallucinations which are difficult to place. Perhaps if they are called "after-images" without too much stress being placed on this as their explanation they will fit in here better than under any other heading. He records that a certain Dr. Lombard had for some years occasionally seen images of persons and things which he had been attentively regarding, but he took little notice of the circumstance. "On December 3rd, 1862, however, a much more decided visuali-

sation occurred. He was then in the Army and stationed on the West Shore of Maryland. A military man, his daughter, a naval officer, and Dr. Lombard were seated in the verandah of a house which stood within a stone's throw of Chesapeake Bay. The girl sat on the second of the steps leading down from the verandah. He himself was on the same step at the other end, there being about five feet between them, and her profile being clearly in view. For no particular reason he began to stare at her, at the same time concentrating all his attention upon the features. At the expiration of about twenty minutes, he turned his eyes towards the bay simply to relieve them, when he saw before him the image of the girl very distinctly, and also in like manner all the objects that had been within the range of his vision. The image began almost at once to fade, but he found that by fixing his whole attention upon it that he could retain it. To this power I particularly draw attention. He next looked over her head towards a wood of southern pine trees, and again saw the image. He had repeated this experiment four or five times when the girl turned her head towards him and asked why he was staring at her so. Dr. Lombard described what he had seen, when, to his surprise, she laughed, and told him he was only a beginner, and that he ought to be able to obtain in twenty seconds what had taken as many minutes. She then led him on the verandah to a point where the moon shone brightly, and asked the naval officer to take note of the time occupied in the experiments. She told Dr. Lombard to keep everything but herself out of mind, to look her full in the face, and then to run his eyes up and down her figure. In a few seconds she called "Time" and told him to look towards Chesapeake Bay, directing him to regard the image as attentively as he had regarded her previously. He then saw the image very distinctly. The time was twenty-two seconds. In the course of the same evening many more experiments were made. In reply to her father and Dr. Lombard she said that she had discovered that she possessed this power through a school-fellow two years before, who possessed the same faculty of voluntarily recalling spectral images. Dr. Lombard asked her whether this power would last any considerable length of time. She said she could only answer for two years from her own experience, upon which the naval officer spoke up, and said that he could answer for nearly

fifty years, having exercised it himself since he was fourteen or fifteen years of age" (11).

(5) *Brain diseases of obscure pathology.—Epilepsy.*—In the aura preceding an epileptic attack hallucinations are frequently met with. These may be sparks of light, noises, olfactory or gustatory hallucinations or strange sensations. Sometimes the hallucination is more definite. Thus the case is recorded of a patient who saw the apparition of an old woman in a red cloak who approached him, struck him on the head with her crutch, and then the fit took place (12).

Forbes Winslow (13) mentions "the case of a young man, who, when his fits came on, thought he saw a carriage drive up at a gallop and with great noise containing a little man in a red bonnet; fearing to be *écrasé* by the carriage, he fell down stiff and without consciousness."

Migraine is supposed to be closely allied to epilepsy, and the visual hallucinations in this disease are well known.

#### DIVISION (B).—HALLUCINATIONS OF MENTAL ORIGIN.

The second division includes those cases which are in a measure of greater interest to workers in insanity. They are those in which our attention is fixed on changes in the mind rather than on changes in the brain.

(1) *Suggestion.*—Very interesting work in this connection has been done by Dr. Seashore. I quote from a review of the original article by Havelock Ellis in the *Journal of Mental Science*.

"The most striking experiments, however, are those which demonstrate the ease with which hallucinations of a definite object can be produced. A spheroidal blue bead two or three millimetres in diameter was suspended by a fine black silk thread in front of a black surface; by a concealed device the bead could be withdrawn and replaced without the observer's notice. The experimenter was seated at a table, ostensibly to keep record, but really to manipulate the apparatus. A tape line was stretched from the apparatus to a point some six metres in front of it. The observer was first shown the bead and then required to go to the further end of the tape line and walk slowly up towards the apparatus until he could see the bead distinctly. When he saw the bead he read off the distance



on the tape-line. The observer was put through this experiment ten times, the distance at which the bead was seen varying but slightly.

"Before the eleventh trial the experimenter pulled a cord which slid the bead behind the frame. The observer, not knowing this, walked up as usual, and when he came up to or a little beyond the point where he expected to see the bead, he generally did see it, and read off the distance as before. As a rule the eleventh, sixteenth, eighteenth, and twentieth trials were made with the bead withdrawn. About two-thirds of the persons experimented on were hallucinated. They knew when, where, and how to see the bead, and that was sufficient to project the mental image into a realistic vision.

"Somewhat similar results were obtained in experiments on touch, electrical stimulation, sound, taste, and smell, and these results are fully illustrated by charts.

"Dr. Seashore concludes that : (1) Such hallucinations and illusions are normal phenomena, which may be reduced to law ; (2) they are due to suggestion ; (3) the main element in such suggestion is expectant attention.

"It is clear we may rely upon hallucinations and illusion as a factor in daily life to a much greater extent than we have yet ventured to do. If a scientific observer, as Dr. Seashore points out in the bead experiment, sees the bead as real, although there is no bead, I do not think we can set any limit to what an excited imaginative person may really see under circumstances favourable for illusion"<sup>(14)</sup>.

Besides hallucinations caused by suggestion, illusions caused in a similar manner are not infrequent. For example, in reading a book or paper we rarely read each word letter by letter, we merely glance at a word or a sentence and divine the meaning. This is one reason why the reading of proofs is so difficult. Bergson<sup>(15)</sup> quotes experiments made by Münsterberg in which a written word was exposed to the view of an observer and at the same time a word of different significance was spoken in his ear. For example, the written word might be "tumult," the spoken word "railroad," and the result would be that the observer stated he saw the word "tunnel."

(2) If hallucinations take place in waking suggestion it is little wonder that in *hypnotism* they are produced with ease in



suitable subjects. For example, it is suggested to the hypnotised subject that he can hear bells ringing, see lights, etc., and these hallucinations appear. A not infrequent experiment is to hand the subject a piece of plain paper and to state that there is a photograph on it. This is then at once perceived. An interesting experiment is that connected with negative hallucinations. It is suggested to the subject that someone present has left the room. Immediately the person is no longer seen. Though I have rapidly passed over the subject of hallucinations induced by hypnotism and suggestion, I do not wish it to be inferred that it is one of minor importance. In any theory of hallucinations these phenomena must occupy a prominent position.

(3) *Crystal-gazing and clairaudience.*—In crystal-gazing the subject gazes at a mirror or glass ball or any bright object, and after a time he distinguishes more or less definite pictures. "The first pictures are often simple—a portrait, bust, plant, animal, or house. Then they become more complicated—a complete moving scene, as in a theatre, a room, a street, a public thoroughfare filled with various people, who walk about, come in and go out just as in real life" (16). When a sea-shell or shell-like body is held to the ear a murmur is heard. In certain subjects definite voices are heard, and this is called clairaudience. Though I have no personal knowledge of the matter, I think that there is no doubt that certain subjects at times obtain hallucinations by these means. As an example I will quote from the "Dissociation of a Personality" by Morton Prince (17). It must first be mentioned that Miss Beauchamp is the name given to a lady who spontaneously changed into three different personalities: "When Miss Beauchamp looks into a glass globe she does not see the details of her vision as small objects reflected in the glass, but after a moment or two the globe and her surroundings disappear from her consciousness, and she sees before her a scene in which human beings—herself perhaps one of them—are enacting parts as in real life. The characters are life-size and act as living persons. When she sees herself as one of the characters of the vision she experiences over again all the emotions and feelings that she observes her vision-self experiencing, and these emotions she exhibits, all forgetful of her surroundings, to the onlooker."

(4) *Hysteria. Somnambulism. Multiple personality.*—Janet

says that in the somnambulism of grand hysteria "the unfolding of hallucinations is incomparable, and, except in some cases of alcoholic delirium, that are a little like hysteria, we shall never find in lunacy such abundance and such copiousness in the hallucinations of all senses<sup>(18)</sup>. To give one case as an example: "It is the story of a young girl, æt. 20, called Irène, whom despair caused by her mother's death has made ill. We must remember that this woman's death had been very moving and dramatic. The poor woman who had reached the last stage of consumption, lived alone with her daughter in a poor garret. Death came slowly, with suffocation, blood vomiting, and all its frightful procession of symptoms. The girl struggled hopelessly against the impossible. She watched her mother during sixty nights, working at her sewing machine to earn a few pennies necessary to sustain their lives. After her mother's death she tried to revive the corpse, to call the breath back again; then, as she put the limbs upright, the body fell to the floor, and it took infinite exertion to lift it again into the bed. You may picture to yourself all that frightful scene. Some time after the funeral curious and impressive symptoms began. It was one of the most splendid cases of somnambulism I ever saw.

"The crises last for hours, and they show a splendid dramatic performance; no actress could rehearse those lugubrious scenes with such perfection. The young girl has the singular habit of acting again all the events that took place at her mother's death, without forgetting the least detail. Sometimes she only speaks, relating all that happened with great volubility, putting questions and answers in turn, or asking questions only, and seeming to listen for the answer; sometimes she only sees the sight, looking with frightened face and staring on the various scenes, and acting according to what she sees. At other times, she combines all hallucinations, words, and acts, and seems to play a very singular drama. When, in her drama, death has taken place, she carries on the same idea, and makes everything ready for her own suicide. She discusses it aloud, seems to speak with her mother, to receive advice from her; she fancies she will try to be run over by a locomotive. That detail is only a recollection of a real event of her life. She fancies she is on the way, and stretches herself out on the floor of the room, waiting for death, with mingled dread and impatience.

She poses, and wears on her face expressions really worthy of admiration, which remain fixed during several minutes. The train arrives before her staring eyes, she utters a terrible shriek, and falls back motionless as if she were dead. She soon gets up and begins acting over again one of the preceding scenes" (19).

Jung (20) gives a lengthy description of another somnambulist, S. W—. She once said, "I do not know if what the spirits say and teach me is true, neither do I know if they are those by whose names they call themselves, but that my spirits exist there is no question. I see them before me, I can touch them, I speak to them as loudly and naturally as I am talking. They must be real." Yet, as Jung says, "To everyone who did not know her secret, she was a girl of fifteen and a half, in no respect unlike a thousand other girls" (21).

Multiple personality is included by Janet as a hysterical symptom. Reference has already been made to Morton Prince's case under the heading of crystal-gazing. The following is another example of hallucinations in the same patient: "During the course of this study it will be remembered that Sally (one of the personalities) subconsciously induced in B. IV. and B. I. (other personalities) time and again hallucinations which were visual representations of her own subconscious thoughts. Sally thought of a snake and willed and straightway B. I. or B. IV. saw a snake. B. IV. had, indeed, another hallucination, similar to the one I have just described, as the prickings of her conscience. The vision was of myself, and upbraided her in language I had previously used for disobeying my expressed wishes. The words and vision were the expression of Sally's thoughts. The evidence is conclusive that subconscious ideas can excite hallucinations in the primary consciousness" (22). This remark by an observer so careful and trustworthy as Dr. Prince cannot be left out of account in any theory of hallucinations.

(5) Hypnagogic hallucinations are those which appear just before going to sleep and just before fully waking. These are most marked in youth, and, as a rule, disappear when adult life is reached. Some adults, however, have the power of seeing visions of hypnagogic nature. For example, "Dr. Weir Mitchell remarked that from childhood he has been able to summon visions before falling asleep, but that once present

they cannot be controlled, and change and disappear of themselves . . . ." (23). "Mr. Greenwood, again, has recorded the hypnagogic visions with which he has been familiar throughout life. These faces are never seen except when the eyelids are closed, and they have an apparent distance of five or six feet. Though they seem living enough they look through the darkness as if traced in chalk on a black ground" (24).

De Quincey writes: "I know not whether my reader is aware that many children have a power of painting as it were upon the darkness all sorts of phantoms; in some that power is simply a mechanical affection of the eye; others have a voluntary or semi-voluntary power to dismiss or summon such phantoms; or, as a child once said to me when I questioned him on this matter, 'I can tell them to go, and they go, but sometimes they come when I don't tell them to come'" (25).

(6) *Dreams*.—The celebrated Bernheim (26), of Nancy, says: "La vérité est que nous sommes tous hallucinables et hallucinés pendant une grande partie de notre existence." In making this statement he was thinking of dreams. Dreams may be considered as the best example of hallucinations existing in sane people. They occur so invariably in the life of every individual as to constitute a normal event. Occasionally one is met with who says he never dreams, but this is so exceptional that it is almost justifiable to assume that the speaker does dream but forgets his dream. Dreams have now so extensive a literature of their own that it is unnecessary to further consider them in this paper.

(7) *Hallucinations in historical personages*.—History, especially religious history, contains numerous examples, but space will allow only a few to be given.

Mohammed was 42 years of age when he first had his revelations. A tradition quoted from Spengel by Ireland (27) says that when "Mohammed was walking in the defiles and valleys about Mecca, every stone and tree greeted him with the words, 'Hail thee, O messenger of God.' He looked round to the right and to the left, and discovered nothing but trees and stones. The prophet heard these cries as long as it pleased God that he should be in this condition, then the Angel Gabriel appeared and announced to him the message of God in the mountain Hira, in the month of Ramadan." Ireland appears to have believed that he was an epileptic, though he denies

epilepsy in the cases of Cæsar and Napoleon. Discussing the question of his sanity, Ireland says (28): "He evidently possessed an intellect of the highest order for managing and controlling affairs, and was skilful both in conducting war and treating with his adversaries." "If Mohammed is to be called insane his insanity was of a very rare type" (29).

Joan of Arc heard a "voice" say: "Joan, you must lead another life and do wonderful actions, for it is you whom the King of Heaven has chosen for the succour of France and the help and protection of King Charles expelled from his dominion. You will put on male attire, and, taking arms, will be the leader of war. All things will be ruled by your counsel" (30). She had visions of the Angel Michael, and with him were St. Catherine and St. Margaret.

Martin Luther is stated to have had hallucinations and is said to have thrown an ink-pot at the Devil. It is, however, doubtful if the story has any foundation in fact. Still, there appears to be no doubt that he heard a voice say to him, "The just shall live by faith."

With regard to Napoleon. "In 1806, General Rapp, on his return from the siege of Dantzic, having occasion to speak to the Emperor, entered his cabinet without being announced. He found him in such profound meditation that his entrance was not noticed. The General, seeing that he did not move, was afraid he might be indisposed, and purposely made a noise. Napoleon immediately turned round, and seizing Rapp by the arm pointed to the heavens, saying, 'Do you see that?' The General made no reply; being interrogated a second time, he answered that he perceived nothing. 'What!' responded the Emperor, 'you did not discover it. It is my star, it is immediately in front of you, most brilliant,' and becoming gradually more excited, he exclaimed: 'It has never abandoned me; I behold it on all great occasions; it commands me to advance, and that to me is a sure sign of success'" (31).

Ignatius Loyola had visions of the Virgin, and one so different in character as George Fox, of the Quakers, heard a "voice."

The list of eminent men who are stated to have had hallucinations is a long one. It includes: Pythagoras, Socrates, Plato, Attila the Hun, Savonarola, Benvenuto Cellini, Hobbes, Descartes, Oliver Cromwell, Pascal, John Bunyan, Malebranche,

Pope, Sir Joshua Reynolds, Goethe, Sir Walter Scott, Krause, and Lord Byron.

(8) *Collective hallucinations*.—The story of the angels at Mons has excited widespread interest and has been the subject of many sermons and dissertations. It is disappointing to find that it rests upon no foundation in fact, and it is merely the figment of the brain of an imaginative writer in the *Evening News* (32). Nevertheless, hallucinations have been stated to have been seen simultaneously by numbers of persons. For example, in 2 Maccabeus, chap. v :

1. About the same time Antiochus prepared his second voyage into Egypt.
2. And then it happened, that through all the city, for the space of almost forty days, there were seen horsemen running in the air, in cloth of gold, and armed with lances like a band of soldiers.
3. And troops of horsemen in array, encountering and running one against another, with shaking of shields, and multitude of pikes, and drawing of swords, and casting of darts, and glittering of golden ornaments, and harness of all sorts.
4. Wherefore every man prayed that that apparition might turn to good.

In the year 1686 a number of people on the banks of the Clyde below Lanark saw the trees covered with bonnets, guns, and swords, while at the same time one company of soldiers after another marched along the river bank in such a manner that one company passed through the other, whereupon the soldiers fell to the ground and disappeared. Immediately afterwards new companies appeared, marching in the same manner. According to the account which has been handed down, two-thirds of the persons present testified to their conviction of the reality of these apparitions, and this conviction was expressed not only in their words, but in the dread and terror shown in their countenances, which struck even those who had seen nothing of this warlike spectacle (33).

(9) *So-called telepathic hallucinations*.—There are numerous well-authenticated cases of hallucinations which are difficult to classify. In books on supernormal phenomena they are termed telepathic, and, without the writer expressing any views on the subject of telepathy, may be mentioned under this heading.

One of my greatest friends, since deceased, told me the following story : He was in business and was ordered by his firm to go to Persia on a commercial matter. His sister at the time was suffering from phthisis and he was naturally unwilling to leave home, fearing he might never see her again. He was, however, obliged to undertake the journey. One day, as he was driving along in bright sunshine in a plain in Persia, he distinctly saw his sister's face. He later found that the time he had this vision corresponded with the hour of her death. My friend had told this to his father and one other person. The latter had laughed at him, and, fearful of mockery, he had never repeated it except to myself under seal of secrecy. The father, who was a clergyman, said he had had similar experiences. I am sure my dead friend would forgive my breaking my pledge to him were he alive, as the story is given and received in a serious manner.

A large number of similar cases can easily be found in the literature of telepathy, and are probably to be explained as a matter of coincidence. This is not the time or place to discuss thought transference, but the point I wish to make is that these are examples of hallucinations occurring in sane people and are instances of the fact that an idea when associated with great emotion can produce an hallucination.

This leads us to the next case.

(10) *Cases of hallucinations due to a complex.*—Dr. Coriat<sup>(34)</sup> writes as follows :

“ Mrs. L—, æt. 46, who was referred to me by Dr. Prince, had been troubled for several years by peculiar visual hallucinations. She constantly saw coffins before her eyes ; sometimes the coffins were lying near an open grave, sometimes one was open and in it she would see a person whom she did not recognise.

“ These hallucinations never left her unless her attention was strongly distracted, and then they vanished for only a few minutes at a time. They were beyond her control. She was unable to make them appear or disappear at will except on some occasions, when they would vanish momentarily when she closed the eyes, after which they would appear in their original intensity.” On analysing the case it was found that “ about four years previously, immediately before the first appearance of the hallucinations, she was in a state of worry and exhaustion



At this time the sight of dirt disturbed her a great deal, and she was constantly cleansing things about the house. When she saw dirt the word 'grave' would flash into her mind, at first as a mere idea, then gradually becoming more and more intense until it became visualised into the object itself. Finally, the word 'grave' suggested the word 'coffin,' and this, too, in turn became visualised into the object."

Freud (<sup>85</sup>) records the following case: "As an example I shall cite one of my youngest hysterical patients, a boy, æt. 12, who was prevented from falling asleep by '*green faces with red eyes*,' which terrified him. The source of this manifestation was the suppressed, but once conscious, memory of a boy whom he had often seen during four years, and who offered him a deterring example of many childish bad habits, including onanism, which now formed the subject of his own reproach. His mother had noticed at the time that the complexion of the ill-bred boy was greenish and that he had *red (i.e., red-bordered) eyes*. Hence the terrible vision which constantly served to remind him of his mother's warning that such boys become demented, that they are unable to make progress at school, and are doomed to an early death. A part of the prediction came true in the case of the little patient; he could not successfully pursue his high-school studies, and, as appeared on examination of his involuntary fancies, he stood in great dread of the remainder of the prophecy. However, after a brief period of successful treatment his sleep was restored, he lost his fears, and finished his scholastic year with an excellent record."

In conclusion, it is to be hoped that the title of this paper has been justified. It was an easy task to collect a sufficient number of hallucinations in the sane. The main difficulty met with was to select suitable examples. Those which have been recorded here have been taken as types out of scores of similar cases which were available.

It may perhaps be news to some that the English Society for Psychological Research in 1894 presented a report on a census taken by them with regard to hallucinations in those in good health. The question which was put was the following: "Have you ever, when believing yourself to be completely awake, had a vivid impression of seeing or being touched by a living being or inanimate object, or of hearing a voice; which impression, so far as you could discover, was not due to any

external physical cause?" "In answer to this question 27,329 answers in all were received, of which 24,058 were negative, and 3,271, or 11.96 *per cent.*, affirmative; that is to say, 3,271 persons stated that they had experienced hallucinations"<sup>(36)</sup>. It is possible that some of those who gave affirmative answers were insane, but such an eventuality was excluded as far as possible. Even if a few such did creep into the figures, the large percentage obtained is very surprising.

It may now well be asked what are the lessons to be learnt from the facts recorded above?

To summarise them as concisely as possible they appear to be as follows:

(1) Hallucinations *do* occur in the sane. I venture to think that such cases should be intensively studied, for, if any progress is to be made in our knowledge of hallucinations, results of value are more likely to be obtained in persons whose intelligence is neither dimmed nor distorted by insanity. Especially worthy of minute inquiry are hallucinations found in border-land or hysterical cases.

(2) There is no reason to believe that an hallucination occurring in a sane person differs in any essential respect from that which occurs in an insane person.

(3) If this be granted, then, seeing that hallucinations in the sane can be produced by toxins, no doubt hallucinations in the insane are also in some cases the result of toxins. In this connection it is noteworthy that hallucinations are most frequently met with in the insanities of alcoholic origin.

(4) It is, however, true that hallucinations can occur independently of physical changes such as might be produced by toxins or disease of the brain. An idea may be visualised or converted into a voice, smell, or other sensory phenomenon. The idea may be introduced from without, as in waking-suggestion, hypnotism, collective hallucinations, and, perhaps, crystal-gazing. Or the idea may arise from within, as in some phenomena of crystal-gazing, dreams, somnambulism, multiple personality, etc. In the so-called telepathic hallucination of my friend the idea of his dying sister was ever present with him, and it is not surprising that her face appeared before him. In the hallucinations of the religious ecstasies, *e.g.*, Joan of Arc, the mind was filled with overwhelming ideas which were converted into hallucinations.

If all the foregoing be granted, then it does seem probable that hallucinations in the insane can, in certain cases at any rate, be best studied from the psychological point of view. Such a study would make use of psychological terms only. The brain and nervous system would not be mentioned in the discussion. It is my belief that progress in the future must be expected on these lines rather than in approaching the subject from the physiological point of view.

(5) It is a very suggestive fact that hallucinations are met with in cases of multiple personality. This of itself does not prove anything, but I feel strongly that in every case presenting hallucinations some process of dissociation is at work. If this is so, then hallucinations would be expected in cases of multiple personality where dissociation is seen in greatest extent. A fuller discussion on this must be reserved for another occasion.

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*The Psychology of Fear and the Effects of Panic Fear in War Time.*<sup>(1)</sup> By Sir ROBERT ARMSTRONG-JONES, M.D., F.R.C.P., R.A.M.C.

IT is an acknowledged fact that in the whole annals of mankind the most eventful period of a nation's psychology is that during which its people is passing through the crisis of war, and the history of nations, from the earliest dawn of society, presents continuous records of warlike operations. The present war, which has already lasted over two and a half years and which is without any immediate prospect of cessation, has disturbed the mind and altered the course of life of whole continents; yet all of us are agreed that it should never be possible for this “malady of princes” to occur again, and it is with the view of preventing its recurrence that civilisation (which means the united culture of all the Allies as well as of the “benevolent” neutrals) is now making a final and intense effort.

Having personal knowledge of the mental effects of the war upon the civil population, and having more recently, as Consulting Physician in Mental Diseases to the Forces in the London Command, some like knowledge as regards the military, I propose in the following paper to write on this subject in part from my own experience, in part also from that of others, as well as to record the effect of panic fear in more remote history. Looked upon psychologically, war is the manifestation of a biological law, it is the embodiment in men of a primordial and