

Notes on Hallucinations. III. By CONOLLY NORMAN.

“ C'est l'entendement qui veoid et qui oyt,” dit Montaigne, et cette pensée profondément vraie doit servir de base à toute théorie rationnelle des hallucinations. Mais il est de notion vulgaire en psychologie que l'entendement ne perçoit ni la lumière ni les sons. C'est par des modifications mystérieuses des centres nerveux que l'intelligence est avertie des manifestations extérieures qui viennent frapper les organes sensoriels.—BALL, Leçons sur les Maladies mentales, 1890.

THE theories by which it has been endeavoured to explain the existence of hallucinations are manifold. In this field, as in so many others where we watch the play of mental phenomena, our point of view varies from time to time, so that the explanations which were once deemed more or less satisfactory become unmeaning when the problem to be solved has itself shifted ground.

The early theories as to hallucination may be described as three :

1. *The psychical theory.*—This is commonly spoken of as Esquirol's theory. Esquirol⁽¹⁾ says, “ A man who entertains the firm conviction that he actually perceives a sensation at a time when there is not within the purview of his senses any object capable of calling up the sensation, is in a state of hallucination. He is a visionary.” Again, “ Hallucination is a cerebral or psychical phenomenon which is accomplished independently of the senses.” And again, “ The habit of always associating sensation with the external object which usually solicits and provokes it lends reality to the products of the imagination or of the memory, and persuades the victim of hallucination that what he actually feels could not exist without the presence of external bodies. The supposed sensations of the hallucinated are images, are ideas reproduced by memory, associated by imagination, and personified by habit. Man then gives corporeal substance to the products of his understanding; he dreams while he is awake.” Lélut, who is an advocate of the same general view, described an hallucination as “ an idea which exteriorises itself” (*se projette au dehors*). Moreau de Tours elaborated Esquirol's comparison

of the dreamer, and even went so far as to say that very often insanity is really only the continuation of a dream. Falret and many others adopted the psychic theory, and it no doubt contains a certain truth, but only if it be accepted in so large and general a sense as to be of little value. It takes no account of physical conditions which cannot be overlooked in any modern study of hallucination.

2. *The sensory theory.*—According to this view hallucinations have their origin in the sensory organs themselves or in the basal ganglia. This theory is associated with the names of Foville, Luys, and Ritti.⁽³⁾ That peripheral irritation in the sense organ itself, or in the nerve-trunk, has often an important determining relation to the origin of hallucination, cannot be denied. But in most instances such irritation cannot be proved, and is not even suggested, except theoretically, so that the chief use to which these exceptional cases can be put is rather the disproof of the purely psychical than the proof of the purely sensory view.

3. *The psycho-sensory or mixed theory.*—Baillarger is commonly spoken of as the author of this theory, which received extensive support for a considerable period of time. Ball, who adhered thereto, speaks ⁽³⁾ of this doctrine as “the hypothesis according to which hallucinations are always psycho-sensory: psychical, because they have their foundation in the patient’s mind, in the accumulated treasures of the intelligence and of the memory; sensory, because they always have their seat of origin (*point de départ*) in the senses.” He compares the condition of affairs which produces hallucinations to a tuning-fork tuned to give a certain musical note but requiring to be struck by an external force in order that the note may be produced.

This theory takes into account two elements which undoubtedly exist in hallucination, but the mode of their synthesis is not thereby accounted for, so that it can hardly be said to offer an explanation of the phenomenon.

It should be said here that Baillarger only applied the psycho-sensory theory to a certain class of hallucinations. For another, as we shall see presently, he offered another explanation not to be distinguished from that of Esquirol.

Each of the doctrines which we have examined has apparent support in a number of observed facts, and yet each is insuf-

ficient, the last, which is the best, being little more complete than the others.

The theory which next claims consideration is that of Tamburini,⁽⁴⁾ who regards hallucination as being dependent upon an irritation of the perceptive or psycho-sensory centres in the cortex. This theory was not immediately and generally accepted when first promulgated, but it has since that time steadily increased in favour. In fact, it is so far conformable to everything that we know of the basis of sensation that in the present state of our knowledge we must almost accept it as axiomatic. We know that a sensation means a change, an occurrence—call it dynamic, molecular, chemical, what you will—in a certain portion of the cortex. We know that this is ordinarily brought about by an irritation conducted from a peripheral organ along a nerve-track. We know from the occurrence of hallucinations of vision in those who have become blind, of hearing in those who have become deaf, and of dolorific, tactile, and muscular sensibility in those who have undergone amputation of the members involved, that sensation can occur where the peripheral receiving organ has ceased to exist or ceased to receive impressions from without. On the other hand, we know from cases of deafness or blindness arising from central disease that the destruction of a cortical sense centre is followed by the obliteration of the sense in question. The conclusion, then, appears unavoidable: that of which we are conscious as a sensation is change occurring in a sensory centre; whatever its remoter origin, whatever its ulterior cause may be, hallucination also must mean change in a sensory centre—change of a similar kind to that which takes place in ordinary sensation, though not necessarily identical in mode or degree. Tamburini seems, when he first enunciated his theory, to have held that the condition of irritation in the psycho-sensory centres in hallucination is analogous to the irritation in the psycho-motor centres which gives rise to epilepsy. The similitude consists in this, that in both cases energies unconsciously stored up in the centres are set free in a manner which may be called spontaneous,—that is to say, otherwise than in response to the customary stimulant. As, however, motion, although it may be held primarily and on ultimate analysis to depend on the influence of stimuli coming from outside the organism, is yet normally related to external irritation in a

much more remote and complicated way than is sensation, it would appear that the analogy is not very close. For that reason, probably, subsequent authors have apparently not found it valuable for the better comprehension of these problems. Putting aside, then, the question of this analogy, it may, I think, be said that Tamburini's theory has now been universally accepted, and that for the present, at least, further theories can only expand or complete it.

Such expansion and completion is the aim of Tanzi, who has dealt with the question of hallucinations in a paper published in December, 1901 ("Una teoria dell' allucinazione," *Riv. di Patol. Nerv. e Ment.*, vol. vi, fasc. 12). This author believes that "while, with the classic data on the subject, it is impossible to conceive a genesis of hallucination different from that which Tamburini has formulated," certain recent physiological advances enable us now to lay down the basis of a more complete and harmonious theory.

Tanzi accepts fully the general views of Flechsig as to the existence of association centres, and believes that in these hallucinations have their origin. "The origin," he says, "of all genuine hallucinations is transcortical. . . . The mechanism of hallucination consists in the retrogression of an image, more or less complex, more or less conscious, which descends from the psychical zone into the sensory centres whence it had come" (that is, in its elements, or primarily), "and thus assumes anew the exact form of a sensation, so as to be mistaken for reality." This mechanism only operates, he believes, in pathological or abnormal conditions by anatomical paths appropriated to the centrifugal connection between the psychical or supra-sensory zone and the cortical centres of pure sensation, even though the paths in question may be normally destined for other functions more or less determinable. These paths appear undoubtedly to exist, there being fibres in the sensory centres which descend from the superior centres and seem to have a centrifugal function. Flechsig regards them as moderators of sensation; Ramon y Cajal as exercising a tonic action in connection with the process of attention. At any rate Tanzi holds that even without these centrifugal fibres it is possible, though not probable, that the superior centres may act upon the sensory centres through the paths which are usually centripetal. That this inversion of the usual direction of the current, though it

seems in conflict with the law of dynamic polarisation, is not to be absolutely excluded in abnormal conditions, appears to be indicated by the results of experiments on *Melapterurus electricus*. In this fish the electric organ is innervated by one single fibre of great size. If one of its smaller branches be dissected out from the electric organ, but not divided from the nerve-trunk, and if it be then stimulated, a complete discharge of the electric organ occurs. Therefore, in this laboratory experiment at least, there has been centripetal and centrifugal conduction along the same fibre.

In connection with this example of centripetal energy travelling along lines normally centrifugal, we must remember that Tamburini seems to accept the views of Hagen, Griesinger, and Krafft-Ebing that the irritation of the sensory centre extends itself over the entire nervous apparatus, to which it pertains as far as the extreme peripheral termination, whereby the hallucination receives the appearance of reality. Kandinsky⁽⁵⁾ observes with some force that this is illogical, as, if this be so, the theory of the localisation of hallucination in the sensory centre does not save us from calling in the whole sensory apparatus, and believing that a sensory excitation can travel along centrifugal lines. There are, however, other reasons for believing that such extension occurs, more potent, it would seem, than any necessity for a sensation exteriorising itself in order to produce the sense of reality, which should not be necessary in accordance with the main tenour of Tamburini's argument.

I may here, perhaps, refer to the observations of Max Simon, *filis*,⁽⁶⁾ on impressions residual to visual hallucinations. That author, while admitting that the fact of which we are conscious in hallucination is an occurrence taking place in the cortex, lays down that with hallucination the entire sensory tract from the cortex to the peripheral extremity is thrown into the same condition that normally exists when a true (objective) sensation is produced by an external agency acting upon the periphery, and so ultimately upon the corresponding cortical centre. He considers that this is proved by the circumstance that in some cases of hypnagogic hallucination, when the image seen is coloured, it occurs that when the eyes are opened and the image has disappeared a phantom is seen presenting colours complementary to those of the original hallucinatory image. A

great number of similar observations have been recorded. Brewster's note that the image in visual hallucination may become double when the eyeball is pressed has been confirmed by other observers. Bostock observed that the images may follow the movements of the eyes. Accepting Tanzi's view that an hallucination is a representation taking a retrogressive course and pathologically converted into a sensation, there seems to be no reason why the same retrogressive action should not be supposed as descending to the periphery, if, at any rate, the ordinary direction of transmission along a nerve-fibre can be reversed. The artificial visual hallucinations of the hypnotic state have been observed to follow ordinary optical laws, to be reduplicated by pressure on an eyeball, or by the interposition of a prism, and so forth. Yet we cannot believe that the peripheral organ is directly affected by the procedure which produces hypnosis; the influence here must come from above, whether from the sensory centres direct, or from the psychical acting through the sensory centres. That hallucinations ever have a peripheral origin Tanzi denies. Naturally he does so in accordance with his theory, and he is entitled to point out the fact that many persons afflicted with ear or eye disease suffer for months or years from "sounds" or "lights" (true, though pathological sensations), and never develop hallucinations. This contention is just, and its bearing upon the origin of illusion is important. Let us put aside cases of what is distinctly delusional interpretation, and consider mere illusion. I described in my last communication a case of a man who suffers from chronic catarrh of the middle ear, which has produced very distinct deafness in one ear. In this ear he hears the voices of his blasphemous and obscene traducers. In what sense can it be held that this man's auditory hallucinations have developed on illusions, and that these are due, again, to chronic catarrh of the middle ear (one of the commonest of diseases in our wretched climate)? Furthermore this particular patient exhibits, as I have mentioned, an interesting visual condition. He gazes into fragments of thick green glass (broken beer-bottles) and sees things and persons and moving panoramas therein. When I cannot see these objects in his talisman, he points triumphantly to the sparkling cracks produced by the lines of fracture running through the glass. Who does not perceive the analogy between the scintillations in the glass which we know this poor

man sees and the noises which we have every reason to believe he hears in his deaf ear? And how can we believe that one any more than the other is the cause of the concurrent hallucination? This man's bits of glass are to him what the magic mirror is to the Eastern necromancer—what the little pool of ink held in his palm is to the Egyptian boy whom the wizard makes see therein complicated visions. But in this latter case, not the play of light on the surface of the ink, but the suggestion of the hypnotiser, is the true cause of the boy's vision. Closely analogous, also, to the visions of my patient are many complex illusions, very close to, if not identical with, hallucinations, and owing their apparent point of origin to some simple sensory impression. Such is the experience which M. Maury relates of himself.⁽⁷⁾ In recounting this matter that author mentions that he was very short-sighted, but Ball, in quoting the case, significantly points out that Maury was particularly liable to hallucinations. Of course we know that he was subject to those hypnagogic hallucinations of which he has given so full and admirable a description. His peculiar liability to phenomena of the sort no doubt supplies, as Ball suggests, the necessary *tertium quid*. Maury's case was this:—He was crossing the Pont Neuf and saw before him a cuirassier on horseback and in full uniform. He distinguished the soldier's helmet, his plume, his cuirass, and the rest of his dress. On approaching more closely he found that the object at which he was looking was a porter carrying a large mirror-plate on his back. The sense of vision had furnished only the sparkling of the glass in the sun; the details of the cuirassier on horseback and in uniform were hallucinatory. All kinds of instances of illusion or hallucination apparently taking its origin in true sensory impression are familiar even outside disease; but it is the condition of the psychical centres which makes the difference between a true and false perception. The old proverbial rhyme says truly enough, "As *the fool* thinketh, so the bell tinkleth." Every one must have experienced how on a night journey by rail the horrible clatter of the train seems from time to time to fall into the rhythm of a familiar tune. "It is possible," says Séglas,⁽⁸⁾ "to demonstrate experimentally that a slight and vague sensory excitation is sufficient to determine the sensory form under which the intellectual action calling forth hallucination shall manifest itself (crystal-vision, shell-hearing)."

All these phenomena are intelligible without adopting the now untenable notion that the hallucinations have a mere sensory in the sense of peripheral origin, and without returning to the generalisations of Esquirol as to the purely psychical nature of hallucinations—generalisations which are too wide to be of any value in the present state of our knowledge,—provided we go a step further than Tanzi, and admit that an irritation commencing in the psychical centres can by retrogressive action descend not only to the centres of sensation, but further downwards, even to the periphery, throwing the whole nerve-tract into a state of abnormal activity.

There is a very important class of hallucinations which Baillarger⁽⁹⁾ was the first among medical writers to describe, and which he separates absolutely from the psycho-sensory. He considered that among the majority of sufferers from hallucination sensory impressions are produced as real as those which give rise to normal sensations; and such impressions, due to the double action of the imagination and the organs of sense, he called, as we have seen, psycho-sensory hallucinations. But he also held that there are hallucinations which are purely psychical. He entertained a very strong opinion on this point, saying that “these false perceptions, which we shall no longer call sensory, appear to be related almost exclusively to the sense of hearing, and cannot be confounded with true hallucinations except by the insane.” He further pointed out that psychical hallucinations had been recognised by the mystic religious writers long before physicians had noticed them. Evidently the latter observation is true, and betrays the unfortunate fact, which is so true a reproach to our craft, that we only too often decline to see facts which do not square with our preconceived theories. Since Baillarger’s time there have been added to his own excellent studies a multitude of others, pre-eminently those of Séglas,⁽¹⁰⁾ who regards the inner voice as an hallucinatory condition of the cinæsthetic centres. These “voices,” which are not distinctly heard, and yet have a strong resemblance to voices, or are described by patients as “voices” for want of any other name, are by that author regarded as depending upon an engagement of the motor speech centres. Lugaro, in his recent work,⁽¹¹⁾ has disputed the propriety of calling these conditions psycho-motor, pointing out that many of them do not present distinct motor phenomena, and preferring to return to

Kandinsky's designation of pseudo-hallucinations. It does not seem as if the designation of these conditions, so admirably and fully described by Ségla, is really a matter of much consequence, since if we regard the engagement as rather one of the function of language than either distinctly sensory or motor, we seem to escape the difficulty. Lugaro appears to fully accept the theory of Tanzi, and to desire to press it further than that author has done.⁽¹²⁾ One feels that his closely argued contention against the phrase psycho-motor hallucination is really a matter of terms rather than of facts.

His cases have been observed with most minute care, and although his main contention appears to be very disputable, we cannot but admire the power of observation which this accomplished pathologist has displayed in clinical work. He tells us that it is worth while and even necessary to apply to the analysis of a psychological phenomenon known for some time the very simple methods of old-fashioned psychiatry—examination and observation. Unfortunately, here, as in other branches of our science, facts need interpretation, and the interpretation of clinical facts in psychiatry presents certain peculiar difficulties. One of these arises from the fact that not only ordinary people, but even students of psychiatry have only a limited vocabulary with which to express the less familiar operations of the mind. When a patient talks of a "voice" that comes to him from some supernatural source, which is as distinct as the voice of his interrogator (we have all heard patients talk thus), and likewise tells us of "an inward voice" which is not audible, which is not really a voice, and which only resembles a voice by its externality and by its intrusive character, the problem that we have first to solve appears to be whether this mode of description by the patient is solely due in the latter case to the poverty of language, or whether the necessity of language is not itself an expression of the deeper fact that the thing which suddenly thrusts itself into consciousness, quite uncomfortably with the current of the patient's ideas, is not truly a sensation, essentially the same in nature as the more easily recognised pathological sensation (hallucination) of hearing. How are hallucinations to be described to us who neither experience the subjective auditory perception of the spoken, nor yet the inner voice? The former is easy of description, for every ordinary person has, like the patient, the objective sensation of hearing to serve as a

standard ; but the "inner voice," when it is described to those who have not experienced it, must be likened to something else, and probably presents the same difficulty as describing colours to a blind man. A well-known medical writer on this subject (some account of whom will be found in an obituary notice at page 316 of vol. xxxvi of the *Journal of Mental Science*) had been himself the victim of "pseudo-hallucinatory" trouble, yet his account of the condition in no way clears up the phenomena which he recorded with unselfish zeal. One of Baillarger's patients, a highly cultivated lady who, in spite of long illness, had not become demented, had suffered at the beginning of her ailment from psycho-sensory auditory hallucinations. These lasted only about a year, and were followed by psychical hallucinations, from which she suffered for twenty-six years anterior to Baillarger's note. "She heard *thought* at a distance by the aid of a sixth sense, which she called the sense of *thought*." "By the aid of her sixth sense she knew all that she wanted to know, and *heard* thought at very great distances. The *voices* intermingled, and it required a great deal of attention not to confuse them together." She accepted Baillarger's challenge to engage in a mental conversation with him, and while he sat quite still she answered his supposed questions with short sentences at due intervals. (Her answers, by the way, have a manifest bearing on her delusions.) She maintained that she had heard all her physician's questions "without any sound striking her ears. The speech was clearly pronounced, the words distinctly articulated just as would have been the case if I had really spoken slowly with the object of being thoroughly understood." The patient's notion of a sixth sense seems to me to have the advantage of Baillarger's somewhat vague notion of a psychical hallucination, but in this particular instance Ségla's view as to the psycho-motor nature of these manifestations certainly offers the best explanation ; the lady was talking to herself, being rather a motive than an auditive person. That she was not conscious that she spoke to herself proves nothing. Ségla rightly insists upon the fact, which had not escaped Baillarger, that many patients with psycho-motor hallucinations will, while listening to an internal voice, move their lips as if speaking, or give utterance to a low muttering sound, or even speak quite audibly, and yet maintain that they have taken no part whatever in the conversation. Now in such cases it is impossible

to exclude the action of the motor speech centres, since we have visible or audible proof of their co-operation; yet the patient is unconscious of their action, and in describing his "inward voice" may appear to be only driven to use this phrase by the necessity of language.

A case of Cramer's⁽¹³⁾ which Lugaro refers to is in the highest degree instructive, but does not appear to justify the contention of Lugaro; for here we seem to have a demonstrative proof of Ségla's doctrine that psychical hallucinations depend for their immediate mechanism on the muscular sense, however obscure the patient's description may be. Cramer's patient was a deaf mute, who had learned finger language and lip language early. He had verbal hallucinations of two kinds: obscene abuse was conveyed to him chiefly by finger language; epithets of praise and dignity were conveyed to him by lip language. Cramer interrogated him and received his replies in writing. The patient used the phrase "hear" to express his reception of his hallucination, till reminded of its inexactness, as he could not hear. He then explained, as we have said, that certain words came to him by one kind of dumb language, certain words by another. It appeared that he had not distinct visual hallucinations, and so it was pointed out to him that he did not see anyone who moved lips or fingers to communicate with him. He then fell back upon the explanation that the communication was one of mind to mind, and that it was worked by magnetism and by "a machine." Perhaps this may be a case of psychical hallucination; if so, that phrase, I submit, is so elastic as to be meaningless. It would appear, on the other hand, that this deaf mute's experiences prove Ségla's case. The higher synthesis here is the function of language, the function by which we receive and communicate ideas. The sensory centres engaged, whereby the patient was conscious of his hallucination, are the centres of muscular sense. The symbols by which this man thinks must be mainly derived from muscular sensations, though it may be admitted that visual impressions would probably be of more importance to him than to those who can hear. We who hear, in our silent thought, think more of the spoken word than the visual image; hence perhaps the relative frequency of auditory hallucinations; but among deaf mutes the conditions would naturally be different. We know that among those who hear

there is much difference between the auditive, the visual, the motive,—those who think chiefly by symbols that have their origin in heard, seen, or spoken language respectively. Cramer asked his patient, “In what language, lip language or deaf and dumb (finger) language, do you think?” and his patient answered, “Very different; the deaf and dumb never express themselves in sentences; all abbreviated.” Cramer then asked, “Do you think with the mouth?” and the patient replied, “No, not with words, only with signs.” This man, then, thought in motor symbols derived probably indifferently from the two methods of language which he had learned in infancy. That he should hear (apprehend) one class of words by lip movements and another by finger movements is analogous to the observations made by Baillarger, Séglas, and others (observations confirmed by cases described in my last paper) of patients who hear one kind of voices in their ear and another in their throat. Such cases like that curious form of unilateral hallucination in which the patient hears different voices in the two ears⁽¹⁴⁾ suggest certainly a remote cause in the supra-sensory region, but they do not exclude the activity of the sensory centre or centres.

The two following cases seem to show the intimate connection of auditory verbal hallucination with psychical or psychomotor hallucination, and even serve to indicate that they are phenomena having a point of common origin.

CASE 21,083.—Male, æt. 36, married, railway porter and soldier. Mother and a maternal aunt have been patients in this asylum. This man is said to have enjoyed good mental health till October, 1901, when, returning from service in the South African War, he found that his home had been broken up through the misconduct of his wife, who had been unfaithful to him and had sold his household goods. He then went to live with his mother, and seems to have been depressed, fretful, absent-minded, and unfit for work. Spent the months of February and March of the year 1902 in the lunatic wards of a workhouse; then lived with his mother again; and, having become threatening and violent to her, was admitted to the Richmond Asylum on August 26th, 1902. He was a well-developed, well-nourished man, free from indications of physical disease. He was depressed and hypochondriacal. Pitied himself, and protested that he had done no harm, tearfully declar-

ing his love for his mother. Said he felt nervous and weak and absent-minded.

Early in September he occupied himself in farm work, though he was dull and self-absorbed. He said he "did not feel well; something came over his head which he supposed was nervousness." Later in the month he refused to work, assigning as a reason that something came across his forehead; something was in his head which prevented him.

In October, 1902, his self-absorbed manner and listening attitudes suggested hallucinations of hearing, but these he denied. When spoken to he was dull and listless, and he complained, "I am very much depressed and grieved and down-hearted." He could assign no definite reason for this condition.

On November 5th, 1902, he had an outburst of noise and violence, apparently reactive to hallucinations of hearing. These outbreaks recurred several times during the month, lasting a day or two. In the intervals he was dull, surly, and silent. On one occasion he refused food because he was persecuted and had no peace.

On November 26th, 1902, he complained that he was tormented by "voices" talking to him and crying to him continually and giving him no rest. They talk about all his past life, and they abuse him and reproach him.

In December, 1902, he improved in self-control and became tranquil. On the 23rd of that month, this note was made by me:—To-day he is dull, with fixed, stupid, and depressed expression. Of his own accord, he talks chiefly of weakness and abdominal pain, both apparently fanciful (or hallucinatory?).

When questioned does he ever hear "voices," he at once replies that he used to hear voices. "I hear them," he says, "when I am bad (*i. e.*, ill). I last heard them when I was last bad,—that is, about a month ago. They were like the voices of my mates in South Africa; they said that my mates here were against me, and things like that." Questioned as to why he had been excited, he said the voices had driven him to it; they gave him no rest. Then he volunteered this statement:—"I do not hear voices now; at least it is more like a thought that comes through my mind. A thought is put into my mind about something that happened to me and my mates in South Africa,

or something of the sort; it comes '*sudden like.*' I do not *hear* it now. It is like a thought. I only hear voices when I am bad."

The case continues under observation. Patient exhibits recurrent periods of excitement (that is, sullenness, restlessness, and violence), with alternating periods of calm, with mild depression and hypochondria. In the former conditions he hears "voices" which are associated with outbursts of rage; in the latter, "thoughts" take the place of voices.

In this case it will be perceived that the intrusive "thought" has the same character of suddenness—that is, of disconnection with what was before in consciousness—and produces the same sense of interruption that the "voices" do. "It comes '*sudden like.*'" It is also imperative—is a form of *Zwangedanke*. "A thought is put into my mind." The patient is not educated, and is not very intelligent at best. Perhaps on that account his unprompted statements to me about his case are the more valuable, as they express real and unsophisticated feelings: sensations, as I hold in either case; morbid sensations, no doubt—that is to say, hallucinations,—in both cases, but as much sensations in the one as in the other.

CASE 20,664.—Female, æt. 30, a countrywoman, of late years lay sister in a convent. Stated to be free from hereditary taint, but the family history is very imperfect. Personal history is likewise scanty. Patient had been in a private asylum, and was said to have been about six months ill when admitted to the Richmond Asylum, Dublin, on January 18th, 1902. She was a well-developed and well-nourished young woman, with a well-formed calvarium and somewhat coarse face, rather prognathous, with thick lips and receding chin. She gave one the idea that she was not a person of high intelligence, and she had a reticence of manner, perhaps due to bucolic upbringing. Quiet and precise. She said she was sent to the asylum on account of voices which she heard, which are nearly all gone now. She heard voices speaking to her from France, giving her orders. These were bad voices, telling her to do bad things, and striving to make her worse than she was. They tried to ruin her soul. She also heard some voices that seemed good, and which she tried to obey. These told her to mortify herself and to be obedient. There are some wicked persons who have the power of working upon her spirit. They endea-

voured to turn her eyes from her work. In the certificate on which she was admitted it is stated that she not only heard voices, but believed that spirits entered her body. Questioned as to the latter notion, she admits that spirits entered her body, but she believes that she has got rid of them. Has not heard any voices these two days.

January 19th, 1902.—She gave my colleague, Dr. Fleury (to whom I am indebted for most of the notes on this case), to understand that “it is nearly three months since the voices troubled her to any extent.” “Now and again it is as if a thought were put into her mind from them.” They were spirits—some good, some evil.

25th.—Admits that she has heard the voices a little since she came here, “but they can hardly be called voices now.” She seemed to describe the event that takes place at present as a sort of inward intimation, though she does not use that phrase. “There was a time when they were actual voices. They said everything. They seemed to have knowledge of all she did and said. At times she saw something like a shadow. Thinks they were spirits. It was not fancy. The good voices told her to do things that were right, and if she did not obey she had scruples.” It is noted that she is a quiet, well-behaved person, good-tempered, and helpful in the infirm ward, where she works.

February 1st.—Hears nothing the last few days. Her persecutors accuse her of things she has not done. They used to try and make her do wrong.

18th.—Does not hear actual voices, but now and again has a feeling as if some one had a knowledge of her thoughts and mind. Though it is, she says, a long time since she heard an actual voice, she will not admit that the voices were fancy. There is a tendency towards delusive belief as to the actions of the other patients being designed to annoy her.

March 18th.—Says she has been hearing the voices about two years. She sometimes obeyed them (apparently the good ones only) and mortified herself at their order. Some of the voices, on the other hand, were very vile, and wished her to do all the harm possible. She has not heard the voices much since she came to the asylum, but she thinks they are real voices.

April 18th.—Admits to notions that the nurses talk about

her rudely and call her names. This is, no doubt, delusional. She is, in fact, a silent, tranquil person, very industrious and useful, and a favourite in the ward. "Sometimes patient hears little voices, not very much. It is from people outside."

May 18th.—The people here annoy her, but not intentionally. Denies that she now hears voices, but has an experience which she finds a difficulty in describing, but which appears to be a communication of the nature of a thought which is put into her mind. Does not know who effectuates this. "Always thought there was somebody speaking to her from France."

July 18th.—"A little annoyance, not much." Sometimes hears whisperings, but does not pay attention to them. Denies that they are fancy.

October 18th.—Hardly ever hears voices now, and at any rate pays no attention to them.

December 22nd.—I suggested to her that the voices which she heard were fancy. She said, "The voices were not fancy. I imagined they were French people. Some were good, some bad. When I hear them at all now they are only whispers, but mostly I do not hear them, only a knowledge of the matter comes into my mind." This "knowledge" is, she told me, suggested by the same influences as formerly directed the voices: "I believe they are French people." There were two sorts of voices, some for her good, others striving to make her bad; some striving to put bad spirits into her, some good. "They tried to make me say and do wrong things, but I don't think I ever gave way to them." Latterly the voices have not been so troublesome; "it is now more as if I had a knowledge of some one that is speaking to me." Endeavouring to explain further, she says, "If I let myself think of the thing at all, something like a little knowledge will come into my head; but the first instant that I feel it coming—hear it coming—have some opinion of it coming"—(she used all these three phrases as if hesitating or correcting herself)—"I can keep it away by not thinking of it."

On December 29th this poor woman was discharged, as I deemed she could safely return to the community where she had served. I have not heard of her since that date.

In both these cases we have phenomena which are virtually the same—distinct auditory hallucinations, giving place to an

inward intimation which the patient describes as "a thought." The latter evidently belongs to the class which Baillarger calls *psychical hallucinations*, and Hagen, Kandinsky, and Lugaro *pseudo-hallucinations*. The fact that the "thought" is substituted for the voice, and that in the case of the woman above described they appear to be occasionally confounded, points to the essential identity of the two conditions. Furthermore both phenomena have the same intrusive, unexpected, surprising, and compulsory character, which leads the female patient to attribute both the "voice" and the "thought" to the same mystic external agency. It is true the patients distinguish the one from the other, naming one a "voice," and describing the other in terms which seem to place it among purely mental operations. To me this appears to present no special difficulty, for I have been in the habit of teaching that there is a sense of mental action, rarely appearing above the threshold of consciousness in the normal state, it is true, and differing from other senses in that respect, but often rendered very evident in morbid conditions through its disturbances. We are at present, of course, not able to point either to the exact mechanism of this sense, nor to its seat, but that should not hinder us from recognising its existence. There is still much that is obscure about the muscular sense; for a long time it was altogether obscure, but these circumstances have not prevented every one from long ago accepting it at least as a working hypothesis. I do not see under what other category save that of sensibility we can bring the many complaints of our paranoiac patients as to their mind being interfered with, their thoughts being compelled, their power of attention being destroyed, etc. The intrusive thought is regarded by the patient as belonging to an order of events identical with the ordinary sensory hallucinations. Thus I have a patient who sees indecent pictures and figures which are flashed before his eyes, hears indecent words spoken, feels that his genitalia are tampered with, and that his mind is forced to dwell upon indecent thoughts which are thrust into it. (Of course every clinical observer will recognise that this case is very far from rare.) My patient attributes all these operations to a common agency. In a manner so do I, though not in his manner. Of his hallucinations the most clearly cut are the auditory; they most closely resemble the common operation of the auditory sense; they are the most clearly

dependent upon an engagement of a cortical sensory centre. The voices are simply heard. Less distinct are the visual troubles: they are not merely described as something seen; they are visions that are flashed before the patient. The hallucinations of the genital sense have not the definiteness they sometimes possess, for they are not accompanied by distinct tactile sensations in the region of the sexual organs, but they have the disconnected and intrusive character common to the auditory and visual troubles. So also with the feeling that mental action is interfered with. The very nature of the function engaged here prevents that distinctness which auditory hallucinations so often exhibit; but we have the characteristics of a sensation—something coming from without and striking suddenly into the consciousness, something which the consciousness rather suffers than does. I fail to see how these four classes of morbid sensations can be differentiated, save by the functions engaged, or how we are to class some of them as hallucinations and some otherwise.

We may pause here for a moment to consider the occurrence of hallucinations of the genital sense, for it seems to me that the variety of forms in which we find genital hallucinations throws instructive light upon the question of pseudo-hallucinations of the other senses. Some patients experience voluptuous dreams, which we may for the present purpose consider as physiological, or they experience conditions of erethism (congestion, etc.) of the genitalia in waking moments, which are, perhaps, also physiological; these conditions have to the patient the appearance of being intrusive, and are by him or her attributed to external agencies. This we may call delusive interpretation, and liken it to the illusions of certain other senses. But other patients in their waking moments are wearied and tormented by sexual sensations unaccompanied in their inception by any special local conditions of the genitalia which may account for them, and seemingly independent of such conditions. To be sure, in many cases what begins as a mere sensation ends in excitation of the generative organs, leading, in the male, to ejaculation of the contents of the vesiculæ seminales; but this is not always the case, nor even as often as one might expect, knowing how easily complete sexual orgasm is produced in states of irritable weakness. Now in many cases we find that hallucinations of the genital sense,

subjective specific sensations, are associated with other hallucinations. The most obvious, though probably not the most common, of the other senses engaged is the tactile sense. Thus male patients complain of the genitalia being handled; female patients of sensations of dilatation of the vagina and of titillations apart from, though concurrent with, specific feelings. Sometimes there is concurrent olfactory hallucination. Male patients not unfrequently tell me that they are made to perceive odours of the female genitalia. I need hardly refer to the obscene visions and the obscene auditory suggestions to which many patients are liable,—the former, I think, relatively more frequent in men, and the latter in women. Again, we have obscene thoughts thrust into the mind, or the mind compelled to dwell upon obscene thoughts. At this extreme we border upon obsession. From time to time we meet cases exhibiting various combinations of these states, or all of them. How are we to say that some of them are hallucinations and others not? How are we to distinguish here between hallucinations and pseudo-hallucinations; between psycho-sensory and psychical hallucinations?

Is it not rather evident that a function is engaged here, and not any one sense, and that the engagement of this function may bring about the engagement of any one of the divisions of sensation which either ordinarily or extraordinarily subserve that function, or that it may indeed cause the engagement of them all?

In other words, does not this once more point to a synthesis taking place in some centre other than that from the specific activity of which we are conscious of any particular sensation? We know that in the higher nervous motor centres individual muscles are not so much represented as groups of muscles performing specific functions. The study of hallucination would seem to show that the sensory centres in the cortex are probably associated together in an analogous way. As sensation is much more complex than motion (if for no other reason, yet for this, that motion—at least the functional motion referred to—is represented in sensation), therefore the associations of sensation are of far greater complexity than those belonging to motion. Though we believe with Tamburini that the sensation of which we are conscious denotes a change in a cortical sensory centre, yet unless in case of purely elementary sensa-

tions (such as many dolorific sensations, ocular sensations of mere colour or flashes of light, auditory sensations of mere noise) we do not seem to have pure sensations; and we are therefore apparently necessitated to think either that a certain degree of synthesis of sensations takes place in the special centre of the predominant sense, or else that synthesis occurs in a higher centre receiving representations (symbols) from several centres. Such a centre is an associative centre of Flechsig, or a psychical centre, and I think with Tanzi that the examination of hallucinations seems to confirm generally Flechsig's doctrines.

(¹) Esquirol, *Des maladies mentales*, 1838, tome i, pp. 159, 191, 192, 201.—(²) Dagonet, *Traité des maladies mentales*, 1894, p. 63.—(³) Ball, *Leçons sur les maladies mentales*, pp. 111 and 112.—(⁴) Tamburini, *Revue scientifique*, 1881.—(⁵) Kandinsky, *Kritische und klinische Betrachtungen im Gebiete der Sinnestäuschungen*, 1885, p. 148.—(⁶) Max Simon defines hallucination thus:—"A sensory perception without an external object to give it birth" (compare Ball, "A perception without an object," *Leçons sur les maladies mentales*, deux. éd., p. 62; and Bianchi, "A subjective perception," *Trattato di Psichiatria*, p. 200). In another place Simon asks, "What is an hallucination in point of fact?" and answers, "A sensation which runs along a sensory nerve in a direction the reverse of normal impressions" (*Le monde des rêves*, deux. éd., pp. 72, 93, 103). Simon does not claim originality for this view, which he says was entertained by Morel, who again followed Buchez. I have not been able to verify the reference to Morel, which is rather vague; but elsewhere that author says, "I reject none of the definitions of hallucination; I give my adhesion to none" (*Maladies mentales*, deux. tome, p. 472).—(⁷) Maury, *Le sommeil et les rêves*, quatrième éd., p. 78, cf. Ball, *Maladies mentales*, p. 64.—(⁸) Séglas, "Les hallucinations unilatérales," *Annales medico-psychologiques*, 8me série, tome 6me, p. 230.—(⁹) Baillarger, *Des hallucinations*, etc., 1846, pp. 385 et seq.—(¹⁰) Séglas, *Leçons cliniques sur les maladies mentales*, 1895, pp. 13 et seq.; *Troubles du langage chez les aliénés*, 1892, pp. 117 et seq.; and several earlier papers referred to in these works. Séglas refers to the fact that Fournié and Max Simon (see the work above quoted, p. 103) had regarded these conditions as disturbances of the function of language, and that Lélut had already suspected this connection.—(¹¹) Lugaro, "Sulle Pseudo-allucinazioni (Allucinazioni Psiciche di Baillarger)," *Riv. di Pat. Nerv. e Mentale*, Genn. e Febb., 1903.—(¹²) Lugaro, *op. cit.*, "It is probable that this fundamental disturbance depends on an elective and systematic lesion of special cortical neurons. The system engaged cannot be either sensory or motor, because the sensibility and the motor capacity are intact; nor can it be a system set apart for the association of images, because the memory and ideation are preserved; the lesion must therefore engage a system of neurons set apart for the supreme co-ordination between representations, the corresponding emotions, and the execution of acts."—(¹³) Cramer, "Ueber Sinnestäuschungen bei Geisteskranken Taubstummen," *Archiv. f. Psych.*, Band xxviii, s. 875.—(¹⁴) Exemplified in a case at present under my care, in which a female patient who suffers from auditory hallucinations hears in her right ear the voice of her priest comforting her, and in her left the voice of the devil tempting her and suggesting suicide and despair.