first offence the last offence, and not to give that chance to the erring attendants which often means the turning over of a new page in their life's history.

I am, then, still ready to allow that the procuring and looking after an adequate staff is no light work, and carries with it many trials, many worries, and costs us many an anxious hour; nevertheless inclined to believe that it is *not* the greatest of the burdens we have to bear, and that on the whole we should be contented that we are able to get fairly competent persons to carry out some of the most trying and harassing duties falling to the lot of those who have to earn their own living.

To at all adequately give a fair summary of our trials and troubles in the short time allotted to a paper would be impossible, and I have not attempted it. I have only lightly touched upon a few of them, and in doing so I trust you will admit that I have not in any way taken too pessimistic a view of what we have to bear.

This paper has been written in no complaining spirit, but simply with the object of ventilating and discussing some possibly not altogether insurmountable difficulties in the pathway of our individual work. I can only end by saying, —would it had been better done!

On Affections of the Musical Faculty in Cerebral Diseases. By William W. Ireland, M.D.

A modern philosopher has revived the theory that music has been evolved out of speech; but even adopting the leading views of the evolutionists, this theory seems little in accordance with their own methods. The harmony of sound appears very low in the animated kingdom, whereas the faculty of speech is the last and highest endowment. Some insects and spiders have the power of producing sounds. This is generally effected by the aid of beautifully-constructed stridulating organs. "The sounds thus produced," Darwin tells us, "consist in all cases of the same note repeated rhythmically, and this is sometimes pleasing even to the ear of man. Their chief, and in some cases exclusive use, appears to be either to call or to charm the opposite sex."

The lowest form of air-breathing vertebrate animals, frogs and tortoises, emit musical notes at the period of

courtship. In birds singing may be said to constitute a language giving expression to the feelings rather than to the conceptions. The variety of notes in the nightingale is so great and prolonged that one might almost say he had the gift of poetry. If the intelligence of the bird were gradually increased through the development of the brain, language would naturally come out of singing; its speech would be song. Music is a gift attaching to a much lower organism than speech. In many children the perception and enjoyment of musical tones comes before the faculty of speaking or the understanding of speech. Some can hum tunes before they can speak. Richard Wallaschek gives a striking instance of early precocity in music.* The son of a musical composer and director, when no older than eleven months, long before he could speak of his own accord, sang the beginning of songs which he heard in the house. At that time "Hush, hush, hush, here comes the Bogey Man," was in every mouth. The child, having often heard this song, when the first word was spoken to him at once took up the tune, singing the three first words, though he otherwise could not speak, and could scarcely be expected to understand the meaning of the words.

Idiots have a turn for music quite disproportioned to their other mental faculties, and not unfrequently those who cannot speak at all can hum tunes correctly. The wonderful construction of the internal ear, and especially of the organ of Corti, puts the vibrations in the outer world in unison with its own tensioned fibres, and thus prepares them for reception to the brain without any difficult effort of adjustment. Music thus appears to be a rudimentary endowment which demands a much lower capacity than that of speech, and is less liable to be destroyed in mental decay.

Though distrusting those speculations by which naturalists pretend to show that one mental faculty is evolved from another, I venture to suggest that we might discern the first traces of the musical faculty in those rhythmical movements which are noticed in idiots of the lowest class. I have observed such cases rocking their bodies and keeping time by whistling or emitting some uncouth sounds. Amongst savages music seems to have a close connection

* See his paper, "Die Bedeutung der Aphasie für die Musik Vorstellung," in "Zeitschrift für Psychologie und Physiologie der Sinnesorgane," Band vi., 1 Heft.

with dancing. The native Indians in Guiana wear necklaces and other pendants from the body and limbs which by their jingling keep time with the dances. Throughout the East it is customary to combine labour with chants or choruses, the one being made to keep time with the other. All the world over such exercises as rowing, dredging, or rocking the cradle are accompanied by song. As Sir Charles Bell has observed, "This disposition of the muscular frame to put itself into motion with an accordance to time is the source of much that is pleasing in music and aids the effect of melody." One, therefore, might rather say that speech was evolved out of cries and musical sounds than singing evolved out of speech. It will scarcely be questioned that music is no technical division, but a special faculty of the mind. The phrenologists located their organs of time and tune in the forebrain, but this has been abandoned along with the rest of Gall's system. Otherwise no attempt has been made to assign the musical faculty to any particular area of the brain. Of all talents bestowed upon man that of music is the most apt to be transmitted by heredity. All the great composers belong to musical families. Sebastian Bach had sixty descendants who were amongst the best-known organists and composers in Germany. What is thus so often propagated must have a deep root in the organism.

While the disorders of speech have been studied with great care and no little gain to psychology, the affections of the musical faculty in cerebral diseases have met with little attention.

There is a parallelism between music and language which Dr. Brazier has stated with admirable clearness in an elaborate paper in the "Revue Philosophique de la France."* In both processes we make use of symbols which may be evoked through motor, auditory, and visual images. The musical note may be mentally sung or played, mentally heard, read, or written, as the letter, the phonetic symbol, or the word may be mentally pronounced, heard, or written. In ordinary speech, as in music, the education commences through the ear and by the auditory centres; then there is a certain training of the vocal apparatus to realize the auditory perception. Speech as well as music is learned through imitation by efforts made in childhood, but it requires a special education and more systematic efforts to

* "Troubles des Facultés Musicales dans l'Aphasie," Vol. xxxiv., p. 337.

learn to read musical notes than to read words, and at last the individual learns to trace these signs and to write musical notes or words. One imperfectly acquainted with music reads slowly and with difficulty, and is obliged to play or sing in order to realize the signification of the characters, just as a half-educated man reads aloud to help himself to understand the full meaning of what he sees. In those who have a great talent for music which has been highly cultivated, the musical characters awake auditory representations, so that some gifted musicians are able to arrive at an idea of the value of a symphony by solely reading without hearing it played. It is well known that injury to a defined area of one hemisphere may deprive a man of the power of speaking, leaving his other faculties intact; but we are at a loss for instances where injury to any part of the nervous system entails a loss of the musical faculty without other damages to the mental capacity. Probably the reason is that musical power must be on both sides of the brain, and be exercised by both alternately when one side is disabled. In playing a musical instrument both hands are generally in use, the left hand often as much as the right. In playing the violin some of the most delicate work is performed by the fingers of the left hand amongst the strings. In playing the organ both hands and feet are used. It is likely that in singing the innervation comes from both hemispheres much more than it does in speaking.

There is no question that there is a connection between music and speaking which sometimes is hardly separable. All speech has some tone in it; generally the voice is in a medium, but painful emotion causes it to rise in the scale, or sometimes to sink. A child commences to cry in a tone nearly ordinary, but as it goes on it takes a higher note.

In some languages, like Italian, euphony is everything. The increase of the musical tendency in speech leads to poetry, which, though coming close upon singing, still requires a distinct talent of its own. I have known a good many instances in which men indifferent to music were fond of poetry, and have a delicate ear for the time and cadence of verse. Though they could not detect a false note in playing, they would immediately notice a false quantity or if the verse were a foot too long. This shows that there is a distinction between the melody of tones and that of verses.

In motor aphasia the power of musical expression is generally injured, though sometimes in a small degree.

Dr. Knoblauch has described the case * of a little girl of six who suffered from nephritis after scarlatina. She was seized with general convulsions, and remained unconscious for five days. After this consciousness slowly returned, but she was found to have right hemiplegia with aphasia. Later on she was able to say "mamma" with a few words. She could sing the song "Weiss du wie viel Sternlein stehen" with the right melody. The words of the song were properly pronounced when she sang, but she could not repeat them in a speaking voice nor voluntarily repeat single words of the same. She could quite well understand what was said to her. She had not learned to read or write. Dr. Gowers † had a patient in whom the whole of the motor speech region of the left hemisphere was destroyed through embolism of the middle cerebral artery. He could only say "Yes" and "No." One day another patient in the ward began to sing "I dreamt that I dwelt in marble halls," when the speechless patient joined in, sang the first verse with the other patient, and then sang the second verse by himself. Dr. Gowers observes that the words were used automatically, and this utterance must have been effected by the right hemisphere.

The child was for two months in the Clinical Hospital of Heidelberg, where she was treated by Professor Erb with iodide of potassium and the application of the galvanic current to the head. She was at the same time methodically exercised in speaking. In a month she was able to repeat the song without singing it; in two months she could utter most words and make herself understood, although she could not form sentences. As the arm had improved the child was discharged after being nine weeks in the hospital.

I myself had under my care a boy of nine years of age. Apparently he had always been deficient in his mental faculties; but his mother said that he could speak a little before he had an attack of varicella, after which he had much fallen off in intelligence. He was passionate, capricious, and resistant. He never could be got to put on his clothes, though he took them off. This boy understood a few simple observations or directions, and seemed to have sufficient intelligence to have spoken a little; but he remained obstinately mute, only now and then uttering a word or two mostly under the influence of excitement. He was fond of

* "Brain," 1890, p. 320.
† "Diseases of the Brain," London, 1885, p. 126.

music, and could hum four or five tunes, singing the words of a verse here and there, or when someone else was singing he would join in with a few words and go on singing. Among the songs which he thus sung in part were "I'm off to Philadelphia," "The Boatie Rows," and "She is my Annie, I am her Joe." All attempts to get him to speak the words without singing were in vain. I had hopes that by encouraging him in singing and exercising his muscles by gymnastic drill he would come in the end to speak, but he was far from being a docile pupil, and only improved slowly during the year he was under my care.

I have heard of a patient in a hospital in London who was paralyzed on the left side. She could not speak in an ordinary voice, though she could say what she wanted in singing. She used broken sentences, always singing them.

Dr. Griffen * reports the case of a girl of eighteen who talked in a low, husky voice, but could sing with a full clear voice. Nothing abnormal could be found on laryngoscopic examination. It was regarded as a case of hysterical aphonia. The affection lasted 11 months, and was finally removed by encouraging her to sing, and getting her by degrees to speak what she had sung.

Dr. L. Frankl Hochwart † has studied the injury to the capacity for musical expression in five cases of aphasia. In all of these the musical power was injured, though in a less degree than that of speech. One patient, a man of 50 years, had hemiplegia of the right side. The power of speaking and understanding words, and also of reading and writing, were reduced to a minimum. Suddenly he began to sing. This gave him great pleasure, but he never got beyond the first measure of the same melody. Thus, though he could sing words which he could not speak, the power of musical expression was much diminished. Of the four other cases of aphasia all suffered from paralysis of the right side. All retained the capacity of understanding words. In three of them the power of speech was lost; in the fourth, a woman, there was great deficiency. All had been good at music. It was found that none of these four patients could sing spontaneously; but they could sing after the words were sung to them. One of these had been a good player on the violin; another on the piano. The first could not play on

* In the "New York Medical Journal," 20th May, 1893.

† "Deutsche Zeitschrift für Nervenheilkunde," quoted in the "Neurologisches Centralblatt," No. 21, 1891.

account of the paralysis of the right arm, but could indicate the strings to be touched; the other could play on the piano with the left hand. Both could play from the music book, but could not sing from it. In both patients the power of playing music was much diminished. In all the cases in which speech was lost the musical faculty had suffered, though in a much less degree. Nevertheless, as Dr. Frankl Hochwart tells us, cases have been described by Finkelnburg, Bouillaud, and Limbeck, in which there was aphasia without injury to the musical faculty.

The counterpart of motor aphasia would be a patient who kept the power of speaking while he lost the power of singing or of musical expression. Dr. Frankl Hochwart tells us that there is no record in which the power of musical expression alone was lost; but something nearly approaching to this is given by Dr. Brazier from a written communication which he received in 1873. Barré, a tenor, who sung the important part of the *Petite Fadette* at the Opera Comique, was suddenly seized, during the representation of the play, with a complete amnesia; neither the orchestra nor his comrades, who tried to prompt him, could succeed in reviving his memory. He did not understand any more what they sung, and could not himself sing a note. When he got back to his lodgings he understood ordinary language, and answered to what was said to him, but it was found that not only the piece which he was singing, but all the pieces which he had learned had faded from his memory, both music and words. He recovered in some months, and was able again to take up his parts. In this case it is clear that the words were forgotten as well as the music. We are not informed whether any other mental faculty was deranged.

Wallaschek mentions a number of instances in which musicians suddenly forgot their parts in operas or concerts. It would be easy, however, to give other instances of actors in ordinary plays failing to recollect what they had to repeat, although they did not lose the power of answering what was said to them. This may be owing to a failure of facultative power, brought on by emotion or fatigue. It sometimes happens that persons under the influence of exhaustion have found themselves unable to speak in a foreign language, though they could use their own. On taking rest or some refreshment, or otherwise recruiting themselves, the power of speaking the foreign language returned.

Wallaschek tells us that the celebrated singer, Emile

Scaria, when performing at the Opera House in Vienna, came sobbing to the manager and said that he must have a special assistant—some one must be near him on the stage to whisper his part to him; the ordinary prompter was no longer sufficient. The company saw with increasing concern the singer's condition get worse. Two years after, at a performance of *Tannhäuser*, it was observed that Scaria could not be expected again to appear in public. The derangement seemed to consist in impairment of memory, which affected his recollection of words rather than of music. Scaria himself announced that it was Bismarck's wish that he should carry on the management of the theatre at Bayreuth. This he had taken up on the death of Wagner. But though Scaria had been entertained at Bismarck's house the Chancellor had never sent any such message. On one occasion Scaria went into a shop in Vienna and ordered a fur coat for the summer which should be lighted with a shining light from the inside. All this indicated insanity.

The counterpart of word deafness, or sensorial aphasia, would be the incapacity to distinguish musical from other sounds (sensorial amusia, Tontaubheit, of Wallaschek). As a general rule in sensorial aphasia the capacity for distinguishing tones is preserved. Some people, however, are born with a great incapacity for musical sounds, what is called no ear for music. Brazier speaks of a man who cannot distinguish one note from another in the ascending scale of the piano; every note struck seemed to give out the same sound. I once heard a Professor of Music say that a man told him he could not distinguish between the sound of a violin and a trumpet. There are soldiers who never can learn the bugle calls.

Dr. Brazier cites no less than fifteen authorities who have mentioned cases of what may be called sensory amusia (Tontaubheit or surdité musicale), the result of brain disease. Brazier lets us know that these observations of alteration of musical perception only occupy a few lines amongst lengthy descriptions of word deafness, and that they have been but slightly studied. Dr. Brazier describes the case of a patient who came under his own observation. This man suffered from attacks of ophthalmic megrim, during which there were passing fits of motor aphasia, lasting from four to five hours. On one occasion when Dr. Brazier called the patient was seized with megrim. There was no aphasia, but he

could not distinguish musical airs. The Marseillaise was being played by a military band, but, though he could hear quite well, the patient could not distinguish the tune. He said that he heard nothing but a noise of brass. Dr. Brazier now found that he could not distinguish tunes on the piano with which he was usually familiar. As this singular condition passed away the same evening there was scarcely time for conclusive examination; but the case indicated to Dr. Brazier's mind the possibility of tone deafness occurring isolated and independent of word deafness.

Lichtheim tells of a man who suffered from word-deafness. He could hear well enough when one whistled or sang, but could not recognize the tune. He used to enjoy hearing his children sing with four voices, but now he told them to stop, saying that they cried too loud.

In cases of aphasia which have been carefully studied it has been sometimes found that when the power of writing has been lost that of reading musical notes has also gone; but there are instances in which these two abilities have been lost singly.

Dr. Oppenheim has published clinical notes* of seventeen cases of aphasia in which the musical faculty has been the subject of careful inquiry.

The general result of these observations was that the musical faculty survived the loss of speech in aphasics. In some of Dr. Oppenheim's patients the other mental powers were evidently injured. After the memory for melodies the memory for numbers was found to be the best preserved. Some after losing the power of speaking words could still hum tunes, others could sing songs, and one could even repeat songs in an ordinary voice, though he could not utter a word towards conversation.

Out of these seventeen persons in whom there was aphasia, with more or less destruction of the left hemisphere, the musical faculty was only extinguished in two cases. The most interesting of Dr. Oppenheim's patients was a man aged thirty-five years, an accomplished musician, and a member of an orchestra. He became subject to motor aphasia, with hemianopsia bilateralis dextra, but with no paralysis. Besides being unable to speak, the understanding of words was somewhat diminished. He could not

* "Ueber das Verhalten der musikalischen Ausdrucks bewegungen und des Verständnisses bei Aphatischen," von Dr. Hermann Oppenheim, Charité Annalen, xiii. Jahrgang, s. 345.

read ordinary letters, but could read and write ciphers, count and add numbers together. Though he could not write to dictation, he could copy writing, but slowly, and with many mistakes. If started with the first words of a song he could go on with the melody, never singing false. If difficult passages from an opera which he had not learned were sung to him once or twice he could repeat them correctly. Though he could not read ordinary letters, neither Latin nor German, he could quite well read and copy musical notes or write them to dictation. With little thought he wrote the C major scale, the C major chord, and similar sequences in musical notation.

He performed on the violin, but with less than his former skill. He complained that owing to the hemianopsia he could not follow with his eyes the motion of the bow. He said that during two nights there were people playing near him. He could distinguish the sound of a piano or violin, a violoncello, a hautboy, and a clarionet. Though this was a hallucination he was so convinced of its reality that he asked the attendants in the hospital to prevent the music during the night.

On the other hand, there are instances related by Finkelburg, Charcot, and others of patients who, without any aphasia, lost the ability to read music, while still able to perform from memory and reproduce the airs which they heard. There is the celebrated case recorded by Bernard: an old lady who taught the piano, though suffering from motor aphasia, could still pronounce the words of the airs which she remembered. She could read the titles of the pieces and the words of the songs placed between the lines of musical notation, though with some hesitation, but could not in any way understand the musical notes. Dr. Brazier gives from his own observation an example of complete blindness to musical signs (amusie visuelle) without any mixture of alexia or word-blindness. A teacher of the piano, aged 36 years, much accustomed to read music, after suffering for the whole day from megrim on the left side, in the evening found that she could not read musical notes. Her sight was unaffected, and she could read ordinary print or writing. This singular condition passed away on the third day.

Cases have been also reported of aphasics who could copy music which they had become unable to read. It is obvious that motor paralysis may much affect the power of musical

expression as exercised through playing on an instrument. Charcot has observed a player on the trombone who had lost the memory of the associated movements of the hand and mouth necessary for performing on his instrument. At the same time all his other motor memories remained unaffected.

Dr. Brazier has shown that musical airs are sometimes associated in the mind with auditory representations, or with motor representations or motor impulses, with contractions of the tensor tympani muscle, or with slight movements of the throat or larynx. Sometimes music is associated with the sounds of the voice, or sometimes with visual images of musical notation, though this is rare. A musician may associate the melodies known to him with more than one of these forms. With different men the associations are different. From this we see that derangement of these associations might tend to embarrass or diminish the musical faculty. One whose music has been principally learned through singing would be more likely to have the faculty deranged in aphasia than one who did not sing, but played on an instrument, whereas any motor spasms or paralysis would injure the power required for performing on an instrument, and thus injure the capacity for musical expression. All this must be borne in mind in considering the derangements of the musical faculty, both in aphasia and insanity.

There are stages in the exercise of the musical gift which mark divers degrees of capacity. There is the simple pleasure derived from hearing musical sounds, the power of remembering a tune and repeating it by the voice, the power of performing on a musical instrument, the capacity for appreciating ideal high-class music, and, the highest faculty of all, that of composing new melodies.

As a general rule idiots have the capacity of receiving pleasure from music, and, as already said, mute idiots sometimes pick up tunes. When the talent for music is marked in the sane members of the family it is generally also marked in the idiot or imbecile. There are some idiots or imbeciles who do not care for music at all. On a careful examination of 180 idiots and imbeciles and 82 normal children Dr. Wildermuth * found that nearly one-

* "Untersuchungen über den Musiksinn bei Idioten, Allgemeine Zeitschrift für Psychiatrie," xlv. Band, s. 574. Berlin, 1889.

third of the idiots had a good capacity for music, and that 11 per cent. of the idiots and 2 per cent. of the normal children were destitute of all musical capacity.

The following is his table for the idiots and imbeciles :—

Of the 1st class.....	27	per cent.
„ 2nd „	36	„
„ 3rd „	26	„
„ 4th (musical incapacity)	11	„

For the normal children :—

Of the 1st class.....	60	per cent.
„ 2nd „	27	„
„ 3rd „	11	„
„ 4th „	2	„

Dr. Wildermuth observes that the people of the village of Stetten, from which the normal children came, were known to have a good talent for music, and that all these children had received systematic instruction in music, whereas many of the idiots, being newcomers to the institution, had never got any such instruction. Taking this into consideration he thought that his examination proved that the musical faculty in idiots was a relatively high one.

Dr. Wildermuth found that many idiots were indifferent to sounds which most people think unpleasing, but this might be owing to their general indolence. On the other hand some showed antipathy towards tones and noises which are generally thought not unpleasant. One wept at the sound of a drum. An epileptic idiot was thrown into a state of angry excitement by the sound of a bell; a hydrocephalic imbecile by that of a wind instrument.

This aptitude in idiots has been taken advantage of in giving them musical drill. Of those who can speak many can be taught singing. This is done simply by the ear. Though it may be said that idiots have musical tastes and aptitudes which are not much behind those of normal children, they very rarely attain any skill in playing upon musical instruments. They are deficient in mental application, generally indolent, and habitually awkward in all bodily exercises. Nevertheless their talents for music present a striking contrast to their utter want of æsthetic tastes, of appreciation of the combinations of colours, beauty of form, or natural scenery. With idiots and imbeciles music is their greatest talent, and arithmetic their greatest deficiency.

We have accounts of some striking manifestations of

increased power in the musical faculty in somnambulism and hypnotism.* In these states the will is in abeyance and the sensibility of the auditory nerves much increased, hence it is not surprising that music should, as it were, draw the whole spontaneous attention. Musical hallucinations said to be of ravishing beauty are described as accompanying the delirium following the use of Indian hemp, in which the activity of all the senses is so much heightened. Increased power in musical expression may sometimes accompany the exaltation of mania, though it can scarcely be exerted otherwise than after an irregular fashion.

As far as my knowledge goes musical expression is best preserved in delusional insanity, but this might be said to hold good with most of the mental faculties.

Ribot has stated as a law of regression that the memory is constituted by a stratification of impressions mounting from the oldest to the most recent. It is destroyed by erosion from the most recent down to the oldest deposits.

It might thus be supposed that in the downward progress of dementia the musical faculty would be the last to go. This in some cases seems to hold good. I have heard of one patient sinking into dementia, who not only retained her musical ability, but could even pick up new tunes. There are patients in asylums who, when seated before a piano, can play their old melodies, although they have lost almost all their other accomplishments. I knew of one girl, aged about fourteen, once clever at school, who had learned music. She became demented through brain fever, and had ceased to speak save a few words which she used in different tones. She was still fond of music; she would go to the piano and play the half of a tune and then stop. She did not play it

* Many of these have been collected to form an interesting paper, "Das musikalische Gedächtniss und seine Leistungen bei Katalepsie, im Traum und in der Hypnose," von Richard Wallaschek in the "Vierteljahrschrift für Musikwissenschaft," 1892, 2 Vierteljahr. A curious case has been related by Dr. Abercrombie ("Inquiries Concerning the Intellectual Powers," eleventh edition, p. 318) of a poor girl employed on a farm. She had been accustomed to sleep in a room separated by a thin partition from one often used by a wandering fiddler. He often spent a part of the night in performing pieces. Several years after the girl was servant in the house of a lady, Dr. Abercrombie's informant. Mysterious music was heard in the house during the night, which was traced to the sleeping-room of the girl, who was found fast asleep but uttering from her lips a sound resembling the sweetest tone of a small violin. After this fashion she performed elaborate pieces of music. This went on, with other curious acts of somnambulism, for several years. In her waking condition she was dull of intellect and showed no kind of turn for music. It is believed that she afterwards became insane.

badly, but broke off suddenly. Anyone who has spent a little time in an asylum must have noticed the irregular playing and singing of the insane, generally snatches of songs or of airs, sometimes loud and sometimes soft, or shifting from one chord to another, showing that the musical faculty shares in the profound disorder of the whole mind. In preparing this paper I have had the advantage of reading some valuable notes lent to me by Dr. Richard Legge, assistant physician to the Derby County Asylum, some of which are given in the same number of this Journal.

Apparently Dr. Legge differs from me as to the relative decay of the musical faculty in dementia. This makes me doubtful of the correctness of my opinion, which is, however, shared by others.* It is to be hoped that Dr. Legge will continue his observations, for which he is very well qualified, from his great knowledge of music and his field for observation. In the meantime I venture to present the following

CONCLUSIONS.

That the area of the brain through which musical feeling and activity are realized is not confined to the convolutions of the left hemisphere implicated in motor and sensory aphasia. It seems to me that the musical faculty must be exercised on both sides of the encephalon. Whether its activity depend upon a circumscribed portion of the brain seems doubtful. It would be desirable to have observations to solve the question whether diseases of the right hemisphere may cause loss of the power of singing, or following, or reproducing melodies. I am inclined to think that this power could only be extinguished by lesions to both sides of the brain at once. It also seems to me that the musical faculty may still survive after extensive brain diseases, which have more deeply impaired the more complex mental faculties.

* Dr. Batty Tuke, jun., observed that in insanity the musical faculty was often the last to go. He mentioned two lady patients who, though incoherent in speech, played with great accuracy on the piano. One of them played by the ear; the other from musical notes, although she was quite unable to read a book, and had not dressed herself for twenty years. (Report of Meeting of the Medico-Psychological Society in the Journal for July, 1891, p. 492).