

thought that the charge nurse, when she went out of the building, received messages for her from different parts. She was very grandiose, but was quite satisfied with the food and with her surroundings. She never interfered with other patients, but got on her dignity if anyone interfered with her.

On Some Relations between Aphasia and Mental Disease.

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THE hope that a study of aphasia might show a way to a better understanding of the nature of insanity is not new. Even at a time when far less was known about aphasia than is known to-day such a hope was not without easily conceivable grounds. It will now hardly be maintained that the perverted speech of a lunatic is always to be regarded as a just presentation of perverted thought. Not only is the thought disordered, but often also the speech itself. The symptom of perseveration, for instance, does not always represent morbid prevalence of an idea ; it may express a disorder which lies rather within the sphere of speech. This is well illustrated in a case of eclamptic insanity reported by Heilbronner.⁽¹⁾ Of pictures representing birds of various kinds, the patient designated many in succession as "swan," even when identification was correct ; she called a stork a swan, and at the same time alluded to the stork fable. In this instance it is not the idea that clings, but the word, as in the recurring utterances of an aphasic. In many forms of mental disease we meet with symptoms of amnesic aphasia, loss of nouns, inability to name objects seen. In certain forms of incoherence we can recognise an element of paraphasia. Thus we can often obtain a clearer conception of the speech disorder of a lunatic by regarding it from the aphasic standpoint.

The late Professor Wernicke, who was the first to call attention in any systematic way to the importance of the relations between insanity and aphasia, laid stress on the significance of the so-called " transcortical " forms of aphasia as links between the aphasias and the mental diseases.⁽²⁾ That form especially to which he gave the name of " transcortical

sensory aphasia" is of great psychiatric interest. It is regarded as corresponding to a type which Lichtheim obtained deductively by supposing an interruption of a path from the auditory word-centre to a schematic centre for concepts.⁽³⁾

According to Lichtheim, such an interruption should express itself as follows. There should be loss of understanding for spoken and written language. Volitional speech should be preserved, though it should be paraphasic. Volitional writing should be preserved, though it should be paragraphic. There should be preservation of ability to repeat words spoken by another person, to read aloud, to write to dictation, and to copy writing; but there should be complete loss of intelligence for what is so repeated, read, or written.

Since Lichtheim wrote there have been published a number of cases which, though showing some deviations, have approached more nearly to this type than to any other. In some cases the disorder has followed injury, or coarse focal disease; but often it is one of the expressions of some form of insanity. For a proper understanding of such conditions, in respect of their clinical as well as their pathological features, more numerous observations are required. In this paper I would discuss briefly those aspects of transcortical sensory aphasia which are of interest to the alienist, and report (by the kind permission of Dr. J. Ireland Bowes, superintendent of the Wilts Asylum) some cases which have come under my personal notice.

A prominent symptom in many instances, one which may often be the means of drawing the observer's attention to the aphasic defects, is *echolalia*. Lichtheim appears to have regarded this symptom as pathognomonic of the condition. Its occurrence in aphasic cases is well known; indeed, it was in association with aphasia that Romberg first described it. Yet it has not always been regarded as an aphasic symptom in itself. Its occurrence in various forms of insanity is mentioned in most of our text-books without reference to its aphasic relations. But there seems good reason to believe that, at any rate in senile dementia, epilepsy, and general paralysis, the echolalia is usually and perhaps always accompanied by aphasic symptoms; and the same may be true of cases of other kinds, including some which might be assigned to the katatonic form of dementia præcox.

Various grades of echolalia have been distinguished. The

slightest is Pick's "Echolalie in Frageform," the purposeful repetition or giving back of a question. As a sign of difficult apprehension this is met with in confusional states. There may be a turning of the phrase, as when in response to the question "How old are you?" the patient says "How old am I?" In the severest grade, "automatic" echolalia, the patient mechanically repeats most of what is said to him, and even words and sentences casually overheard. Between these two extremes there are any number of intermediate grades, so that it is nowhere possible to draw any sharp distinction between what is purposive and what is automatic. Throughout the series a relation can be traced between the echolalia and *defect of understanding for spoken language*, most clearly perhaps in cases such as that reported by Sterz.⁽⁴⁾ His patient could still understand and speak fairly fluently her Slavonic mother tongue, but for German, which she had not learned till grown up, she now showed echolalia without understanding. Similarly an unusually puzzling question will sometimes elicit echolalia from a normal person. A conventional imitation of this natural phenomenon is presented to us in the entertainments of nigger minstrels whenever a riddle is propounded.

Arnaud has attempted to distinguish six forms of word-deafness, three of which, on account of preservation of ability to repeat words spoken by another person, would come under the head of transcortical sensory aphasia.⁽⁵⁾ In two of these forms, those which he terms "mental" word-deafness, there is some disturbance of voluntary speech: but while in one there is echolalia without understanding, in the other the patient understands the words after repeating them ("echolalia with consecutive intelligence"). In the remaining form, "representative" word-deafness, in which there is no defect of voluntary speech, repetition is apparently of no assistance. These forms, as Pick has shown, fade into one another, so that the classification has little value.⁽⁶⁾

Transcortical sensory aphasia may be transient or permanent. As a transient disturbance it may be observed in some cases of intoxication by alcohol or chloroform.⁽⁷⁾ More interesting to the alienist are the transient disorders occurring in epilepsy. Pick has given an excellent account of such word-deafness and echolalia in re-evolution after epileptic fits.⁽⁸⁾ Similar disturbances in epileptic confusional states, not obviously attributable

to fits, have been described by Raecke.⁽⁹⁾ The occurrence of the same aphasic disorder during Jacksonian fits may be illustrated by the following case :

Married woman, formerly a cook. Family history unknown. Had three children. First attack of insanity at age of twenty-nine. Admitted to Wilts County Asylum in 1874, at the age of thirty-two, in the third attack. Quiet, depressed, suicidal ; delusions of poisoning and hallucinations of hearing. Since then she has been silly and weak-minded, but cheerful, industrious, well-behaved, and on good terms with patients and staff. Has had silly delusions, as that her brain has been stolen and pickled, and that her stomach contains a drawing-room full of people. At times she has had combined hallucinations of sight and hearing, imagining she saw children swimming in her coffee, and that she heard them singing. Delusional in talk, but quite coherent. Moderate dementia. Well orientated as to place and persons, and fairly well as to time.

On the evening of March 7th, 1903, she became shaky and stupid, and was found to be suffering from slight right hemiparesis : partial loss of speech for a few hours. After a few weeks no paresis was noticeable.

She remained as before till the afternoon of May 8th, 1905, when she had a typical major epileptic fit ; three more fits during the night. Next day she seemed quite as usual ; no speech defect, hemiparesis, or other focal symptoms could be discovered. Had one fit that day and another in the night ; drowsy stage after the fits lasted not more than ten to fifteen minutes. On May 10th and following night she seemed well ; no fits.

May 11th.—From 11 a.m. onwards through the day, she has been subject to spasm of the right upper extremity, lasting about one and a half to two seconds, and recurring at intervals of about three to fifteen seconds. The muscles affected are chiefly the triceps, infra- and supra-spinati, and rhomboids ; in less degree the pectoralis major and muscles of ulnar border of forearm, particularly extensor carpi ulnaris ; doubtful slight implication of biceps, deltoid, and latissimus dorsi. No affection of trapezius and neck muscles, or of hand, other limbs, or face. All the affected muscles are thrown simultaneously into a strong contraction, which subsides in a quiver. As the patient lies in bed the position assumed by the limb is as follows : arm straight and lying close to the side, shoulder slightly raised, fingers flaccid and semi-flexed, wrist slightly extended, forearm midway between pronation and supination.

She tries to stop the spasm by holding the limb with the left hand ; says, " Doctor, I don't know what's the matter with my arm. It keeps moving, and I don't want it to move ; it's so funny. Can't you stop it for me ? " " Nurse, come and hold my arm. " Her speech is a little slower than usual, rather hesitant and drawling, after the manner of typical epileptic speech ; articulation good. Doubtful very slight right facial weakness. The incidence of the spasm does not affect the speech.

When asked to show her tongue, she repeats the words " Show me your tongue " ; but she wears a blank look, and does not do as she is told. Request repeated twice, with same result. At the fourth time

she repeats as before, and again, more slowly; then, "Show my tongue?"—and puts out tongue. The same process has to be gone through for every simple question or command, unless gestures are employed: these she readily understands. She volunteers occasional remarks about her arm, asks for something to drink, etc. There is no paraphasia, and her remarks are quite sensible.

She can shrug the shoulder, but other voluntary movements of the limb, including finger movements, are abolished. When she is made to understand that I want her to put her right hand to her face, she lifts it with the other, but the recurrence of the spasm prevents completion of the movement. Cutaneous sensation on the limb seems somewhat impaired. She walks with slight unsteadiness, but does not tend to fall to one side more than to the other. She stands steady, with eyes shut and feet together, spasm continuing. Knee-jerks and plantar reflexes normal (flexor response). Pupils normal. I saw her several times during the afternoon and evening, but the condition showed no variation.

The spasms continued till 9.40 p.m. (no sleep), and then ceased. At 9.46 a major epileptic fit, lasting two minutes, and involving the whole body, with deviation of head to the right; 9.53 to 9.56, while still unconscious after the fit, occasional recurrence of the spasm; slept; 2.45 a.m. (May 12th), fit, with similar recurrence of spasm for a few minutes in the succeeding drowsy stage; slept; 5.10 a.m., fit, followed as before by brief recurrence of the spasm.

Since then there have been no more fits or spasms. By the morning of May 12th, the word-deafness and echolalia were gone, and except that she was dull and sleepy she seemed her usual self. There was marked paresis of the arm, but this improved rapidly in the next four or five days. Weakness and impairment of finer movements of fingers were still present two months later. Handwriting slow, tremulous, and jerky, but quite legible.

Heart somewhat enlarged, impulse felt with difficulty, sounds rather faint and indistinct. Arteries generally somewhat thickened. Pulse slow, tension not raised. No albuminuria.

In general paralysis the commonest mode of occurrence of echolalia is in association with a similar word-deafness in re-evolution after seizures, as in the following case;

Woman, æt. 34. General paralysis two years. Argyll Robertson pupils, loss of knee-jerks, tremors, ataxic and slurring speech, unsteady gait, *bien être* and grandiose delusions. Talkative, restless, and dirty. For months she had not given a relevant answer to a question. No previous seizures.

On the evening of May 24th, 1905, she gradually became comatose, and showed well-marked right hemiplegia. Lay for four days almost unconscious, did not speak, paid no attention when spoken to. On the fifth day more awake, looked about, smiled happily. Said "Yes" or "Well" to everything said to her, but without understanding. On the sixth and seventh days she repeated automatically everything said to her, including whole sentences; added no words of her own. Simple

requests were echoed in this way, but not executed. Hemiparesis now scarcely noticeable. On the eighth day no echolalia; simple commands, as to show the tongue or place the hand on the top of the head, were correctly obeyed. Patient occasionally said "Yes" in response to questions, but often inappropriately; no sensible answer could be obtained. Objects seen could not be named. In a few days she was talkative as usual, babbling incoherently her delusions.

In numerous cases of acute insanity of confusional type milder grades of echolalia are observed for brief periods, always, so far as I am aware, in association with defect of understanding for spoken language.

We may now turn to the consideration of cases in which transcortical sensory aphasia is observed as a permanent condition. Some are cases of gross lesion, usually in or near the left temporal lobe. More interesting, and probably more numerous, are those in which no such lesion is found. Many of these are cases of senile dementia, with pronounced cerebral atrophy and arterial degeneration. For comparison with a case of my own I give abstracts of some of the published records. They not only illustrate the speech disorder which concerns us, but are of considerable interest in connection with the cerebral localisation of mental disease. The second case in the list is interesting historically, as by it Pick first showed that a local aggravation of a general atrophy might produce localising symptoms, recognisable as such during life, and permitting a topical diagnosis. It so happens that most of the cases of local atrophy, reported since by Pick himself and other observers, have likewise been cases of transcortical sensory aphasia, in which a general wasting has been most marked in the left temporal region. In Liepmann's case the previous observations of Pick and Bischoff allowed a predominant wasting of this region to be diagnosed during life. However, in another case of Pick's, clinically a well-marked example of transcortical sensory aphasia, the wasting was chiefly in the frontal lobes. In no case has it been limited to the temporal region. Liepmann insists on the importance of the general wasting, even in cases (such as Heubner's) in which the temporal region has been the seat of a focus of softening. At present, at any rate, we are not justified in regarding the aphasic disorder simply as the result of disease of the temporal lobe, to the exclusion of the more diffuse affection.

The following are the principal cases, arranged in chronological order :

PICK (¹⁰).—Man, æt. 61, lawyer. Delusions of suspicion and persecution; imaginary voices. Understanding for spoken language greatly impaired; the simplest questions were understood only after much reiteration. Talkative; large vocabulary; speech mostly unintelligible, correct words being senselessly strung together; no insight for this. Imitative speech correct; echolalia. Reading aloud fluent and rarely incorrect; understanding quite lost. Spontaneous writing fluent; resembled spontaneous speech. Writing to dictation and copying were rapid, mostly correct, no understanding. Objects seen could not be named. Case published in patient's lifetime.

PICK (¹¹).—Man, æt. 71. Senile dementia; progressive loss of memory during the past three years; excited and aggressive at times, and partially disorientated. Understanding for spoken language was very defective; simple familiar questions about himself he could mostly understand, other questions not at all. Was talkative, had a considerable stock of words, but so mixed them up that much of speech was unintelligible; verbal and literal paraphasia. He showed partial insight into his speech defects. Reading aloud was slow, laborious, and often wrong. Complete loss of understanding for written language. Preservation of ability to repeat the words of others. Writing, voluntary and to dictation, impaired; copying impaired. Objects seen were mostly recognised, but often wrongly named. General wasting of cortex, more of left hemisphere than of right, most marked in left temporal lobe; no focal lesion.

ASCHER (¹²).—Man, æt. 45. General paralysis; marked defect of memory, talkativeness, flight of ideas; after twelve months, sudden onset of aphasia. Voluntary speech quantitatively reduced; vocabulary restricted; some paraphasia. Marked impairment of understanding for spoken language; only the simplest requests were executed; questions were mostly not understood. Echolalia. Could point out many named objects; when asked to name an object shown, he often used senseless words, or called it by the name of his attendant. Reading aloud, correct for single words, some errors in continuous passages; no understanding. Voluntary writing almost abolished, and, except for his name, unintelligible, words being senselessly strung together. Writing to dictation, paragraphic; copying, slightly paragraphic. Death at 47; general atrophy, specially marked in first left temporal gyrus; no focal lesion.

PICK (¹³).—Woman, æt. 67. Demented; found wandering; at times did not know her son. Spontaneous speech preserved, but vocabulary greatly reduced; great sameness of speech; prayers and passages from the Bible were correctly recited. The simplest spoken questions and requests were rarely understood; partial insight; purposive repetition; imitative speech correct. All writing, and understanding for written language, lost (little accustomed to read or write). Objects seen could not be named. General wasting, most marked in left upper temporal region, and to a less extent in Broca; no focal lesion.

PICK (14).—Woman, æt. 61. Great loss of memory, apathy, aimless wandering. Spontaneous speech quantitatively reduced, paraphasic, rarely correct. Understanding for spoken language much impaired; simple questions and requests occasionally understood. Imitative speech correct; marked automatic echolalia. Reading aloud, correct; no understanding. Voluntary writing quite paragraphic; to dictation, paragraphic; copying slavish. Objects seen could rarely be named. General atrophy, most marked in frontal lobes; no focal lesion.

BISCHOFF (15).—Woman, æt. 65. Depressed, suicidal, restless; rapidly became demented and lost. Voluntary speech, rambling; verbal paraphasia, loss of nouns, great reduction of vocabulary. Spoken language rarely understood unless accompanied by gesture. Imitative speech mostly correct. Reading aloud, fairly good; some paralexia; understanding almost completely lost. Spontaneous writing, lost; to dictation, fair; copying, partly preserved; no understanding. Objects seen were understood, but could not be named. Later, apoplexy, right hemiplegia, and death in six months. General wasting, especially of left temporal lobe, and to a less extent of right: recent softening in internal capsule.

LIEPMANN (16).—Woman, æt. 74. Senile dementia of three years' duration; apathetic, restless, dirty. Extreme reduction of spontaneous speech; paraphasia. Loss of understanding for spoken language. Correct imitative speech: at first, purposive repetition with occasional consecutive intelligence: later, marked automatic echolalia, without intelligence. Could not be induced to read or write. Objects seen and handled were not understood. General atrophy, more in left hemisphere than right, most marked in left temporal lobe, and to a less extent in Broca; no focal lesion.

HEILBRONNER (17).—Woman, æt. 69. Senile dementia, beginning like Korsakow's psychosis, with total disorientation as to time, place, and persons, confabulation, and inability to retain recent impressions. Slow, insidious onset of aphasia in the second and third years. Spontaneous speech, rambling and irrelevant, some paraphasia, great reduction of vocabulary. Almost complete loss of understanding for spoken and written language. Partial ability to read aloud, paraphasic. Imitative speech fairly well preserved, with partial intelligence. Considerable loss of understanding for the use of common objects and of ability to name them. Pronounced general atrophy, but especially of left temporal lobe.

STRANSKY (18).—Man, æt. 65. Apoplectiform attack, with loss of speech and transient right hemiplegia: confusion and excitement for some weeks, and dementia onwards. *Flexibilitas cerea*. Marked automatic echopraxis. Voluntary speech scanty, paraphasic. Perseveration. Understanding very defective for spoken language, and lost for written. Automatic echolalia. Reading aloud, paraleptic. Writing, voluntary and to dictation, paragraphic; copying absent. Objects seen were often misconceived, often could not be named. General atrophy, most marked at junction of left supramarginal and first temporal gyri: no focal lesion.

BERG (19).—Man, æt. 49. Depression, alternating with excitement and violence; confusion; moderate dementia; gradually increasing

aphasia. Spontaneous speech extremely paraphasic ; agrammatism. Understanding for spoken words and short sentences preserved, lost for longer and more complex sentences ; simple requests often understood. Imitative speech preserved ; echolalia. Reading aloud, intact, rarely with understanding. Simple written requests, though read correctly, were almost never understood ; simple written questions were more often understood, and could sometimes be answered in writing, though with paraphasia. Voluntary writing very paraphasic ; to dictation, occasionally paraphasic, rarely with understanding ; copying intact, not slavish, no understanding. Objects and pictures were understood and correctly named, also objects handled with closed eyes. Still works well as a tailor. Case published in patient's lifetime.

With these might be compared Alzheimer's case of perivascular gliosis of the left temporal region,⁽²⁰⁾ the cases of softening around the posterior extremity of the first temporal gyrus reported by Heubner⁽²¹⁾ and Pick,⁽²²⁾ Bonhoeffer's traumatic case,⁽²³⁾ and also, of course, the well-known case of Lichtheim.⁽³⁾

The cases of echolalia which are most difficult to discuss are those with severe dementia, having their starting-point in earlier life, and presenting in their initial stages symptoms of acute insanity. Some of these cases appear to answer to the description of dementia præcox ; it is in the katatonic form of this disorder that echolalia, according to Kraepelin, most frequently occurs. In a large proportion of such cases the echolalia is not observed until a late stage of the disease ; it is then associated with gross dementia, marked defect of understanding for spoken language, and paraphasic incoherence. Apparently in reference to such cases as these Pick offers the suggestion that the dementia may have developed gradually out of transcortical sensory aphasia.⁽²⁴⁾ They appear to be very slow in their course, and would require to be minutely studied through a long series of years. As the aphasic condition does not specially attract notice till a late stage, we have no sufficient records of its mode of development.

The diagnosis of katatonia in cases of this class cannot be regarded as having any etiological significance. For not only echolalia but other katatonic symptoms, such as echopraxis and *flexibilitas cerea*, occur in various pathological conditions and in various periods of life. They are observed, for instance, in cases of senile atrophy, and in cases of gross organic lesion. When they occur in such cases, they not infrequently happen

to be the accompaniment of an aphasic disorder of the kind which we are considering.

Of cases which might be assigned to dementia præcox, I have had several under my notice. I have also a patient who became insane, at the age of twenty-five, one week after confinement. In the acute stage she had hallucinations of hearing, and delusions of suspicion and of personal unworthiness; she thought her husband was the devil, and that he had killed her child. She could answer some questions readily and rationally, but her memory and ideas of time were confused. Apparently she suffered from an ordinary puerperal insanity or exhaustion-psychosis. In the next two years she became much demented, lost, incoherent in speech, noisy, and dirty in habits. Though there is not, and never has been, anything to suggest coarse lesion, she now, after thirty years, shows marked word-deafness, automatic echolalia, extreme paraphasia and word amnesia, and can rarely name the commonest objects. The aphasic symptoms are now dominant, for evidence of delusions and hallucinations vanished long since. Dementia is now so advanced that detailed notes would have little interest. The same may be said of my cases of presumable dementia præcox, with one exception. In this instance the mental state and degree of education of the patient permit a detailed study, and the deficiencies in the history are sufficiently counterbalanced by the interest of the clinical features to warrant a full report.

Fanny R—, unmarried, admitted to the Wilts Asylum, March, 1896, under the following certificate: "Quite idiotic, repeats the latter part of the question you ask her, instead of answering it, and then laughs; continually talks to herself." Mother and maternal aunt insane, and brother feeble-minded. Patient was born in 1842, had always had good health, and led a moral and temperate life; was a teacher in an elementary school. Symptoms of insanity first appeared about the age of twenty; assigned cause, disappointment in love; she took to wandering about the neighbourhood singing hymns, and would get up at night at all sorts of hours; has been insane ever since. Previous to admission to the asylum, she had been an inmate of a workhouse since 1888; was sent to asylum because she had become dangerous, "striking the attendants, pulling the fire out of the grate, pouring a kettle of boiling water about the room, destroying clothes and bedding, behaving indecently."

On admission.—Sparely nourished, looks older than her years. Slight kyphosis; chest contracted; lungs apparently healthy. Apex-beat displaced slightly downwards and outwards; apical systolic murmur. Pulse fair, regular, 90; arteries thickened. Urine normal; no albumen.

Right pupil slightly larger than left: both react normally. Knee-jerks normal. No asymmetry of face or limbs. No trace of paresis.

For a few weeks after admission she was mischievous and destructive; and in the summer of 1899 she was noisy and spiteful, and smashed crockery. Except in these two periods she has given little trouble, and her condition has varied little. She has been under my observation since August, 1902. The following account is compiled from notes made in the autumn of 1905.

Present state.—Her general physical condition seems unchanged. Vision is good: she reads small print. Optic fundus normal. Attempts to map out the visual fields have proved vain; there is nothing to suggest hemianopsia. Hearing is good apparently in both ears; she hears the slightest whisper; formal tests with the watch have been fruitless. A few rough tests of smell and taste show no defect of these senses. There is no defect of cutaneous sensation.

She does no work of any kind: sits idle when indoors, but looks about and takes notice of what goes on around. She knows the names of various members of the asylum staff, but has difficulty in recalling them, often giving wrong names before hitting upon the right. She well knows her way about those parts of the asylum in which she has been. Knows she has been here a long time, but has no idea of dates. Is not wet or dirty in habits, but is very untidy. Makes a mess with her food; has little regard for the use of a spoon, holds it in the right hand, between the palmar surfaces of index and little fingers and dorsal surfaces of second and third fingers. At times she is given to bolting her food. She is usually able to dress and undress herself, but sometimes she will tie her stockings round the back of a chair, throw her boots out of window, or put on her clothes in a wrong order. For years she has had a habit of rubbing the ends of her dress together as if she were washing clothes. She has some slight mannerisms of posture when seated. She often reads aloud from books and newspapers, but without evidence of understanding. She always appears cheerful and contented. At the slightest smile or laugh of a bystander she bursts into laughter. Once, in 1903, I saw her walking behind another patient and imitating her peculiar gait, but on no other occasion have I observed anything of the nature of echopraxis.

The following sample of conversation is fairly representative: (What is your name?) What is your name? Fanny R—? Master R—? Zulu? (What place is this?) Asylum? Devizes? (Where do you live?) Where do you live? Up at the globe? 'Tilda Globe? Some little chair? (What are you doing here?) What are you doing here? Paintley or what? Solchester? Liquor then? (How old are you?) How old are you? Fourteen? (Have you any brothers or sisters?) Yes. (How many brothers?) Good many, good number, ten, score, acre of land. (How many sisters?) Sisters? Two. (What are their names?) What are their names? Thunderland, Saunders, schoolroom children, schoolbell, tit for St. Paul's, tit for kettle bell spontial sudden. . . . (Who is this?—Nurse C. B) Who is this? Edith Higglethead sermons, churchgoer, clergy come up, me, ria, . . . (What is to-day?) Good Friday? Wednesday? Ash Wednesday? (What have you had for dinner to-day?) Meat, cooked meat, cold Columbus. (Have you

had dinner to-day?) To-day please, meat, beef, soup, our Simeon, Amen, Sicily, Denmark, Surrey, soup, hot, bun, lady angel, liquor . . .

In these answers we see traces of the so-called "flight of ideas."

Voluntary speech.—Though not noisy, she is very talkative. She exhibits a characteristic logorrhœa; she is constantly muttering to herself a meaningless jumble of words, with no suggestion of sentence-formation. Names of persons figure in great profusion. The words "school," "children," "teacher," are also frequent. Mingled with such talk is a quantity of mere jargon, with no recognisable words.

She has not been known to ask any sensible question; if she requires anything, as at the meal-table, she indicates her wants by gestures. For any practical purpose her voluntary speech is so paraphasic as to be almost useless. She often greets me with "How are you to-day, missus?" but apart from a few conventional utterances of this kind she volunteers no sensible remark. Once I heard her say to no one, and *à propos* of nothing, "That's what I meant when I said it was better for the teacher"; and on another occasion, when someone shouted in another part of the ward, she called out, "All right, Philip, my boy, I'll come to you directly." Such formally correct utterances can be detected, very rarely, in the logorrhœa. They always have reference to her former occupation as teacher, and are almost certainly old series revived whole, not constructed at the moment. She never produces phrases of such a calibre in response to questions, or suitably to an occasion. All her volitional speech is scrappy and disjointed; she seems incapable of constructing the simplest sentence ("agrammatism"). And if a question cannot be answered in a word or two, as by giving the name of an object, her reply is usually senseless or unintelligible.

In many cases of aphasia, including some which belong to this particular class, the vocabulary is very scanty; the loss is most evident in relation to nouns, especially proper names. In the present case an almost opposite condition is observed. Her potential vocabulary is somewhat extensive, as is shown by the great variety of words which arise in the paraphasia. There is a wealth of nouns, but a very scanty stock of other parts of speech. Many of her utterances consist only of names of persons, used quite inappropriately. If she uses a verb it is nearly always as a bare infinitive, without subject or prefix of any kind.

Whether she understands a question or not she usually gives an answer of some sort; she rarely hesitates for lack of a word. Nearly all her answers are given with the rising inflexion characteristic of question. There is an entire want of appropriate expression and intonation. Pronunciation is good and free from dialect. Articulation is perfectly distinct.

Understanding for spoken language.—Some short, simple, and conventional questions are understood; but often she fixes upon a single word in the question, and links some association to this word, irrespective of the context. I have never heard her confess want of comprehension. Any question of more than about six words is usually answered senselessly. The questions understood are mostly such as have reference to her own person, or to some object before her. Questions of more remote or abstract significance, however simple, are answered

without evidence of understanding—*e.g.*, “Do good men go to hell?” Even to all manner of abuse and threats she seems deaf, unless they be expressed simply in a word or two. “You have two noses” amused her; here there is a reference to the concrete. But when I tried Lichtheim’s test, saying, “I am Peter Black, and I am only four years old,” and asked her “Is that true?” she said “Yes,” even after several repetitions. The absurdity was not perceived. Eleven days later she called me “Peter Black,” though the name had not been mentioned in the interval. She knows my real name.

Simple commands, as to come here, sit down, stand up, or show the tongue, are mostly executed, even when unassisted by gestures; but more complicated requests, as to go and sit in the chair by the window, or take a book from the table to the mantelpiece, are usually not followed at all, or are only partly executed; in the middle of the errand she stops, with a look of hesitation, and utters some jargon or a few proper names. She does not appear inattentive or unwilling to do as she is desired. Gestures are understood.

Questions and requests often have to be repeated several times before the right reaction can be evoked. Complexity of the sentence and mere number of its words appear to be important factors in preventing her understanding; her difficulty is not only in understanding the words singly, but in understanding them in combination; in this respect there is a resemblance to Berg’s case. Of words which can be understood individually the stock is not very small, as may be ascertained by presenting them in a short, conventional setting, *e.g.*, “What is —?” She can understand the names of many articles in common household use, articles of furniture, food and clothing, names of familiar animals and birds, etc., but the test-results are very variable and contradictory. The names of even the commonest things (*e.g.*, spoon, sugar, key, pen), even when repeated half a dozen times, and when she is not inattentive, often fail to awake intelligence; repeated a minute or two later, the same word may be at once understood. If she can see the object before her, there is rarely any difficulty. Geographical and historical names are not understood, with the exception of a few of the most familiar biblical names; for these a parrot-like memory of some text may help her. Names such as “London,” “Thames,” “France” are apparently not recognised as names of places of any sort.

In all such tests one must not at once assume that understanding is wanting because the answer is senseless; it often appears senseless because it is paraphasic. To this source of error I have endeavoured to pay due regard.

Imitative speech.—The automatic echolalia is the most noticeable symptom. The patient repeats a considerable part of what is said to her; in the case of short sentences the whole sentence, in the case of long sentences the last few words. Not rarely she echoes a sentence of as many as twelve words. Articulation is perfect, and the inflexions of the speaker’s voice are well reproduced. She repeats the senseless utterances of other patients. Paraphasia is rarely observed except in special testing with long and uncommon words; it may be literal or verbal. Short sentences in foreign languages are echoed, with some inaccuracies—not, apparently, because understanding of the meaning

is anyway necessary for repetition, but rather because the auditory and motor speech mechanisms respond best to those excitations for which they have been educated.

Repetition is evidently not essential for understanding, nor do I think it is ever of much assistance to her. The echolalia is entirely "automatic"; there is no turning of the phrase, as in Pick's *Echolalie in Frageform*.

Serial speech is well preserved. She has a speech memory of large portions of the Bible and of the Book of Common Prayer. She can count up to thirty, recite portions of the multiplication table, and can say the alphabet in both directions. But if it is desired that she rehearse one of these series, it is useless to say, for example, "Say the alphabet"; one must begin it for her. In this way, but in this way only, she can be led to recite nearly all our Lord's parables, other passages of Scripture, and any part of the Order for Morning and Evening Prayer. The only exceptions to this rule as to the mode of eliciting series are in the case of the Lord's Prayer and the Apostles' Creed; it is then sufficient to say, "Say the Creed."

Such series afford the best means of studying the mode of production of the paraphasia; for, as we have the original text for comparison, we presumably know what she intends to say. At the last section of the Creed she goes on, "I believe in the Catholick blue picture"; then follows jargon, with no recognisable words. I have observed a somewhat similar sequence of events on many occasions; the failure in speech leads first to verbal paraphasia, and the jargon follows. Sometimes the paraphasia is worse: "I believe in God the Father Almighty, maker of Julia, suffered under the young Jew, was crucified the dead men, conceived of the Virgin Mary, but in my spirit the pink Polly . . ." (jargon). Resemblance of sound is often traceable, as in "picture" for "Church," "pink Polly" for "Pontius Pilate."

(It is somewhat remarkable that the paraphasia is worst in those series which she should be expected to know best—the Creed and the Lord's Prayer. These are the very series which she can recite without being started. Probably she does know them best. It is hardly conceivable that this good Churchwoman, who is able to recite long passages of Scripture without perverting them, has forgotten the Creed and the Lord's Prayer. Nor can I attribute her perversions to fooling. Not only is her manner becomingly grave, but if, as soon as she begins to go astray, the first syllable of the next correct word be given her, she instantly takes it up, and continues correctly. She may be further prompted if necessary, always with success. If she were fooling, she would hardly be turned so readily from her purpose. In former years, recitation of the Creed probably required no effort of memory, so her attention now is not specially drawn to the words; and as, in speech of any sort, she is little aware of errors, there is nothing to incite her to correct them. In less familiar passages some slight effort is probably necessary to recall the actual words, and on this account their reproduction is more under the control of the attention. Similar phenomena are observed when she recites the days of the week, the months of the year, several well-known hymns, and other familiar series, but not in such as are less familiar.)

The paraphasia is primarily *verbal*, consisting in the use of genuine but inappropriate words. Pure literal paraphasia seems not to occur in her voluntary or serial speech, or in reading. If the jargon is to be regarded as a mixed literal and verbal paraphasia, the literal disorder is secondary.

Spelling.—She can spell words when asked, but there are many slight errors; her spelling approximates to phonetic spelling. She can sometimes say what a word is when it is spelled to her, even if it contains as many as ten letters, but often she gives a wrong word of similar sound.

Ability to name objects seen.—When an object is shown, she will give it a name of some sort, but much more often wrong than right. The wrong names do not suggest mind-blindness, but verbal paraphasia, and, to a less extent, word-amnesia. A resemblance to the correct word is often traceable—*e.g.*, saucer, “citizen”; sovereign, “Solomon”; shilling, “shilling”; What is it made of? “Salisbury” (*silver*); penny, “Fred, Frank” (*farthing?*); What is it made of? “Metal, prince” (*bronze*); bottle, “ball”; vase, “voice”; carpet, “Patrick”; parcel, “Charlie”; canary, “bird, cuckoo, canary”; geranium, “flower, Jemiriam”; penholder, “Inkermann.” Occasionally, association by contiguity is observable: Cuff, “apron”; a penny of the present reign, “Queen Victoria.” Sometimes she uses a descriptive evasion: collar, “shirt-thing”; spectacles, “seeing-things.” Often she uses first a vague or general term (*cf. supra*, metal, bird, flower), and then one of closer significance. Often after giving a wrong name, she gives the correct name. Having given the correct name, she does not go on to give incorrect or senseless names. If, when she does not find the correct name, its first syllable is given to her, she usually gives the full word promptly.

As designations for objects, she frequently uses names of persons and places, and very often the word “soldier.” Perseveration in typical form does not occur; she does not designate successive objects by the same word, but occasionally a word once used will reappear sporadically in the course of the testing. Thus, having called a vase “voice,” she uses that word later for two other objects.

In selecting a named object from a group of objects she rarely makes a mistake.

Reading aloud.—She can read aloud at a fair medium pace, but without errors. How far these are paraphasic, and how far paralectic, it is not easy to say. The following is her version of part of a magazine article: “The landing-place consists of steps formed in the prepenny-ridiculous (perpendicular) side of the rock on which the lighthouse stands. The coastguards were there to receive us, and told us it was imperative that each one should stand on the gravel (gunwale) of the boat and jump directly they gave the word. Most of us did so, but in one case, if not held back at a satirical (critical) moment, a fatal loop (leap) would have been made. It is an increasing (interesting) place to see, and gives one a vital (vivid) idea of the pearls (perils) of the sea.” Often the errors are more numerous. “Meteorological Office” is read, very rapidly, “Emily-Moody-chronologies-calico-office.” Passages in French are read in senseless paraphasic English. All her reading is

devoid of appropriate expression and intonation, even in the case of scriptural passages which she can recite correctly in a natural manner. In her reading of such passages there are errors of the same kind as those which occur in the case of unfamiliar passages. She never appears to understand what she reads.

She can read numerals, but only up to two places—914, “ninety fourteen.”

Understanding for written language.—Simple written requests are read aloud in an expressionless way, apparently without understanding. A request is not executed, even when it consists of only two or three words, is correctly read, and is such as she executes when it is given by word of mouth. It is not executed when prefaced by a written injunction to do what is written, or when given with any sort of oral injunction to that effect. In rare instances she will execute the request if, immediately *after* she has read it, she is told to “do that.” This method also is usually without result. When the request is now repeated orally, it is at once executed. I have never obtained an answer to a written question; she never understands that the words constitute a question. Moreover, the “?” is a “semicola.” When she is made to read a palpable absurdity (“The table is a good dog”; “I have two noses”), and is at once asked, “Is that true?” she replies, gravely, “Yes.”

Writing.—Voluntary writing is abolished. Asked to write her name, she scribbles a series of curls. She writes her name to dictation, but some of the letters are so malformed as to be unrecognisable. *F* is made rather like *C*, and *R* like *D*. A small *m* looks like *nnnn*. Asked to write the word “dog,” she writes *donz*, *dony*, *doj*; it seems as if she has forgotten the formation of *g* and is trying to recall it. Asked to write “monkey,” she writes *Aomdey*, though she spells it correctly aloud as she writes. “Bishopstrow,” a name once familiar to her, is written *Oosopstoroo*; she spells it correctly when asked. In many words written to dictation, one or more of the terminal letters are replaced by *ny* (“London,” *Lonny*); in such instances it seems that she strays into the ending of her own name “Fanny.” Copying is not much better; it is not slavish. In copying print into script, there are many literal errors. She cannot be made to copy print with print. She copies simple geometrical figures very clumsily. She can copy numerals. Writing numerals to dictation is very defective; many are wrong or unrecognisable.

She cannot read the time from a clock.

I have not been able to obtain any satisfactory results in my attempts to test her capacity for retaining recent impressions. Casual observations, as of the above “Peter Black” incident, suggest that such impressions are sometimes well held.

She can sing some verses of songs and hymns to appropriate tunes. If one of these tunes is played upon the piano, she will begin to sing it.

Summary.—Among the psychiatric symptoms in this case we may include katatonic mannerisms, stereotyped movements, impulsive acts, and echomimia; flight of ideas; marked mental impairment and lack of spontaneity, with good memory for certain things.

The speech symptoms are as follows: Voluntary speech shows extreme verbal paraphasia, agrammatism, and disorder of intonation, with para-

phasic logorrhœa and jargon. Serial and imitative speech are well preserved (automatic echolalia). Reading aloud shows slight verbal paraphasia. Understanding is very defective for spoken language, and is lost for printed and written language. Voluntary writing is abolished. Writing to dictation and copying show marked literal paraphasia.

This, I suppose, from the psychiatric standpoint, may be a case of katatonic dementia; from the standpoint of general medicine it is a case of sensory aphasia. Though the history is regrettably meagre, I think we may infer with some probability that the case is one of insanity as ordinarily understood, and not of gross lesion; also that there is considerable diffuse atrophy of the brain, predominating possibly in the region of the left temporal lobe.

The sensory character of the disorder is shown not only by the defect of understanding for spoken and written language, but by the characteristic logorrhœa, the word-amnesia, and the predominantly verbal rather than literal paraphasia. To these we may perhaps add the agrammatism. Of the relations of this symptom to sensory aphasia and to temporal lobe lesions a useful survey has been given by Pick. ⁽²⁵⁾

The patient's speech shows evident traces of what is termed, not very happily, "flight of ideas." Though this is one of the cardinal symptoms of mania, it is, of course, by no means peculiar to maniacal states. That aspect of it which is termed "clang-association"—the condition in which the current of ideas (or rather the current of speech) is determined by similarity of word-sounds—shows an evident relationship to verbal paraphasia. One of Wernicke's patients, a young woman who suddenly became aphasic in consequence of some vascular lesion, and who certainly was not insane in the ordinary sense, exhibited not only clang-association but other manifestations of flight of ideas, as definitely aphasic symptoms. The notes of this case are of the highest interest. ⁽²⁶⁾

How are we to picture to ourselves the mode of production of the echolalia? Preservation of imitative speech in certain cases of dementia with aphasia is interpreted by Pick ⁽²⁷⁾ in accordance with Dr. Hughlings Jackson's doctrine of evolution and dissolution. It is observed that a child learns to speak by repeating the words which he has heard, apparently irrespective of understanding. A path from the auditory to the motor speech centre is accordingly regarded as the oldest or first-

opened association-path of speech. In virtue of this priority it is further regarded (by implication from the doctrine) as comparatively resistant to interrupting influence. Of all the associations of the auditory image of a word, the motor image is the simplest, most definite and most firmly established. The other associations, those which constitute the meaning, are complex and ill-defined, and vary not only with the widening experience of the hearer, but often also according to the context or the circumstances in which the word is heard; these associations are therefore more liable to be dissolved.

The extension of this principle to echolalia may be formulated somewhat as follows: The child is supposed to learn to speak through the effective action of some kind of primitive impulse to imitate, or some kind of reflex subserved by the path which I have mentioned. In the course of evolution of the individual the action of the impulse or reflex becomes inhibited by the complex higher associations linked to the hearing of language and constituting its meaning. If these higher associations are dissolved their inhibiting influence ceases; the impulse, which is supposed not to have been at any time removed, appears to become again effective. Its effect is echolalia. The imitation now is more perfect and prompt than in childhood, because the whole speech apparatus has been perfected through exercise. The doctrine of inhibition applied here is, of course, Dr. Hughlings Jackson's. The notion that the echolalia of the dement is the analogue of the imitative speech of the child is one which we owe, I believe, to Krafft-Ebing.

Pick ascribes the inhibition to the auditory word-centre, which he accordingly regards as an inhibitory organ for the speech mechanism; he explains the logorrhœa of many sensory aphasics in the same way. There does not appear to me to be any advantage in ascribing the inhibition to the auditory word-centre; such a notion is difficult to harmonise with that which regards the auditory word-centre as the seat of primary revival of words for speech, a notion which has been widely adopted and has certain conveniences. It seems more agreeable to conceive the inhibition as exercised, not by the auditory word-centre itself, but through it, by higher associations whose paths radiate from the auditory word-centre to the centres which are denoted summarily in Lichtheim's schema by the "centre for concepts."

If this application of the doctrine of inhibition to the doctrine of centres appears awkward, we may adopt a metaphor of another kind. We may say that if the wave of excitation from the periphery finds on arriving at the ordinary word-centre that some of the channels through which it once flowed are now closed, it tends to flow more strongly through those which still remain open to it. If the newer channels (those to the conceptual sphere) are blocked, it is forced into the older channel (that to the motor speech centre).

Whether we are content with such views of echolalia or not, they have the merit of taking into account the relationship of echolalia to defect of understanding for spoken language. At any rate, as Pick shows, we must give up the old view of Ziehen⁽²⁸⁾, that echolalia is a symptom of irritation. Rather it is a symptom of defect, most marked in chronic conditions characterised by absence of other phenomena of the kind we ascribe to irritation.

Echolalia is often classed, along with so-called compulsive acts, under the head of symptoms of disorder of will.⁽²⁹⁾ To say that it is due to disorder of will is inadequate and misleading. It is useless, because it fails to correlate echolalia with other speech symptoms. It is misleading, because echolalia may in some cases be fairly regarded as a purposive and reasonable act. In such a connection as this it is probably better to avoid the notion of will entirely; its subjective origin unfits it for precise scientific use.

When we turn to the consideration of my patient's defect of understanding for written language, it may seem puzzling that she cannot understand a few simple words when she reads them aloud, though she understands them when they are spoken by someone else. A difference of this kind was present in some degree in Berg's case, and apparently also in others of the cases abstracted. We can hardly explain it by supposing a disorder in any one centre, or a path-interruption other than that already assumed; for then we should be faced with the question why the patient does not understand by hearing the sound of her words as she reads. Perhaps the following considerations may suggest the direction in which an explanation is to be sought.

Self-observation acquaints us with several ways of reading which are disadvantageous to comprehension. If I have to read aloud, I inevitably attend to the articulation of my words:

not necessarily with conscious effort, I am attending also to rhythm and quantity. It is partly on this account that as soon as I grow tired I am in danger of paying too little heed to the sense; my reading may now become such that while the listener still follows it, I myself no longer take it in—at any rate, have no recollection of what I have this moment read out; the sound of my words has not helped me. Again, in reading a proof, I have to notice carefully the appearance of the letters, so as not to overlook some solitary misprint; so much, then, does the meaning escape me that if I am to scrutinise the wording, I must peruse afresh. And, in general, it is obvious that understanding is impeded whenever the more mechanical part of the reading is attended with difficulty, however slight, however occasioned. The obstacle which baulks understanding in the reading of a proof is only a magnification of one which is always present in reading of every kind.

In these instances we say that understanding suffers because attention is divided. This is hardly an explanation; it is rather a way of describing the result. It is therefore chiefly important for us to note that there are factors or conditions necessary to the reading process itself which tend to produce this result. As their preoccupying effect is noticeable to some extent in ordinary persons, especially in states of fatigue, we may justifiably infer that in a pathological lowering of associational activity the same factors may be sufficient to make understanding impossible. Though my patient can still read aloud with some facility, these factors may nevertheless prevent understanding, by making, as we say, too great demand upon her attention. When the words are spoken by someone else, she can often understand them; the process involved in the hearing of language is simpler, more primitive and direct, and is free from the impediments which I have indicated.

But her reading may also be regarded in another way. From the standpoint of evolution, the meaning of words is associated primarily with the memory of their sound. In learning to read, the visual image of the word is associated with the auditory image already acquired. In reading, then, the visual image awakes the auditory image, and through this the meaning is awaked. The indirectness of this process would, in dissolution, presumably operate unfavourably to understanding. Moreover, the most stable association of the

auditory image is the motor image; the auditory image awaked in reading, like that awaked in hearing, should tend to awake in its turn the motor image; reading should have an original tendency towards articulation. This tendency may, in fact, be observed in children learning to read. In the course of evolution it becomes inhibited by the associations which already inhibit imitative speech. In dissolution, the inhibition is removed. In harmony with these considerations is the circumstance that, so far as I am aware, my patient always reads aloud. She does so almost automatically whenever any printed or written matter is before her. Thus, in her reading, we can trace the operation of the same factors as those which give rise to echolalia⁽³⁰⁾.

Pick says that in connection with echolalia the principles of Dr. Hughlings Jackson find one of their most successful applications. These associated phenomena of reading may afford some further justification of Pick's remark.

(¹) Heilbronner, *Monatsschr. f. Psych. u. Neurol.*, xvii, 1905, p. 429.—(²) Wernicke, "Aphasie und Geisteskrankheit," *Deutsche med. Wochenschr.*, 1890, p. 445; *Grundriss der Psychiatrie*, Leipzig, 1900, p. 7 *et passim*.—(³) Lichtheim's "Type VI" (*Brain*, vii, 1885, pp. 433-484).—(⁴) Cf. Stransky, *loc. cit. infra*, p. 466.—(⁵) Arnaud, *Arch. de Neurol.*, xiii, 1887, p. 378.—(⁶) Pick, "Beiträge zur Pathologie und path. Anat. des Centralnervensystems," Berlin, 1898, pp. 20, 32, 42. Also "Beiträge zur Lehre v. d. Echolalie," *Jahrb. f. Psych. u. Neurol.*, xxi (ref. *Revue Neurologique*, 1903, p. 901).—(⁷) v. Monakow, "Gehirnpathologie," 1897.—(⁸) Pick, "Ueber die sogen. Re-evolution," etc., *Arch. f. Psych.* xxii, 1891, p. 756.—(⁹) Raecke, "Das Verhalten der Sprache in epileptischen Verwirrheitszuständen," *Münch. med. Wochenschr.*, 1904, pp. 256-259.—(¹⁰) Pick "Ein Fall von transcorticaler sensorischer Aphasie," *Neurol. Centralbl.*, 1890, pp. 646-651.—(¹¹) Pick, "Ueber die Beziehungen der senilen Hirnatrophie zur Aphasie," *Prager med. Wochenschr.*, 1892, pp. 165-167.—(¹²) Ascher, "Ueber Aphasie bei allgemeiner Paralyse," *Allgem. Zeitschr. f. Psych.*, xlix, 1893, pp. 256-277.—(¹³) Pick, "Beiträge zur Path." etc., pp. 25-36.—(¹⁴) Pick, *Ibid.*, pp. 37-43.—(¹⁵) Bischoff, "Beiträge zur Lehre von den sensorischen Aphasie," *Arch. f. Psych.*, xxxii, 1899, p. 730, Case 1.—(¹⁶) Liepmann, "Ein Fall von Echolalie; Beitrag zur Lehre von den localisirten Atrophieen," *Neurol. Centralbl.*, 1900, pp. 389-399.—(¹⁷) Heilbronner, "Ueber die Beziehungen zwischen Demenz und Aphasie," *Arch. f. Psych.* xxxiii, 1900, pp. 366-392; *post-mortem* note in *ibid.*, xxxiv, 1901, p. 396, footnote 3.—(¹⁸) Stransky, "Zur Lehre von den aphasischen, asymbolischen, und katatonen Störungen bei Atrophie des Gehirns," *Monatsschr. f. Psych. u. Neurol.*, xiii, 1903, pp. 464-485.—(¹⁹) Berg, "Beitrag zur Kenntnis der transcorticalen Aphasie," *Monatsschr. f. Psych. u. Neurol.*, xiii, 1903, pp. 626-640.—(²⁰) Alzheimer, "Ueber perivascularäre Gliose," *Allgem. Zeitschr. f. Psych.*, liii, 1897, p. 864.—(²¹) Heubner, "Ueber Aphasie," *Schmidt's Jahrbücher*, 1889, ccxiv, pp. 220-222.—(²²) Pick, "Beiträge," pp. 111-118.—(²³) Bonhoeffer, *Arch. f. Psych.*, xxxvii, 1903, pp. 800-825.—(²⁴) Pick, "Beiträge," p. 42.—(²⁵) Pick, *Ibid.*, pp. 123-133.—(²⁶) Kleist, "Ueber Leitungsaphasie," *Monatsschr. f. Psych. u. Neurol.*, xvii, 1905, p. 514.—(²⁷) Pick, "Ueber die Bedeutung des akustischen Sprachcentrums als Hemmungsorgan des Sprachmechanismus," *Wiener klin. Wochenschr.*, September 13th, 1900, pp. 823-827.—(²⁸) Ziehen, in *Ebstein's Handbuch d. prakt. Med.*, iv, p. 48 (ref. Pick, *Wien. klin. Woch.*, *loc. cit.*).—(²⁹) Cf. e. g., Kraepelin, "Psychiatrie," 6te Aufl., i, p. 212; Ziehen, "Psychiatrie," 2te Aufl., 1902, pp. 134, 173, 184. The only

reference Ziehen gives on the production of echolalia is to Meschede "Ueber Echolalie und Phrenolepsie," *Allgem. Zeitschr. f. Psych.*, liii, 1897, pp. 443-454. According to Meschede, Krafft-Ebing's notion holds good for many cases of dementia, but not for those which exhibit the most typical echolalia. "The repetition is brought about, not by removal of inhibitory influences, but really by active intervention of extraneous motives, by hallucinatory and psychomotor (psychokinetic) spasmodic or automatic impulses to movement: it is a *phrenoleptic* phenomenon rather than a symptom of defect." In support of this highly subjective and non-scientific interpretation, Meschede describes a case. The notes betray the patient's inability to recall names for persons and objects seen, and possibly other aphasic defects; but on these points Meschede makes no remark. He says the echolalia is effected without the intercurrent of conscious will, and even compulsorily in spite of and contrary to the will. Kraepelin speaks of increased flexibility of the will, but I cannot determine whether he supposes the will itself is induced to effect the echolalia, or whether something else effects it while the will is asleep. Ziehen avoids the term "will," but nevertheless inclines to similar modes of thought. He tells us that echolalia is a compulsive act, the outcome of a compulsive idea. But he leaves us no wiser than we were before, for he does not show why *this* particular idea becomes compulsive rather than some other idea. For the solution of this problem psychology is less helpful than ordinary clinical observation. All we know of echolalia has been learned by regarding it in a purely objective way from the standpoint of natural science, by observing what other speech symptoms it is associated with, or by correlating it with other phenomena of its own class. And as this is the only way in which the facts can be ascertained, so the only useful way in which they can be interpreted is in accordance with any principles found applicable generally to such phenomena *objectively* regarded—such principles, for example, as Dr. Hughlings Jackson has shown us. In this way we can preserve a consistently natural-scientific point of view. We can study the patient's movements, of whatever sort; but when we endeavour to look behind them, to a "will" or an "idea," in the manner proposed by some authors, I fear we are apt to see nothing but our own image, reflected as in a distorting mirror. (*) That a similar reversion to the primitive type of reading sometimes occurs in normal persons is shown by the common tendency to read aloud or in an undertone any passage the meaning of which is at all obscure. Whether this is purposive or automatic, helpful to comprehension or not, the important point to note is that it is occasioned by failure of understanding. The phenomenon may be compared with the echolalia elicited by riddles.

Some Notes on the Study of Insanity. By F. GRAHAM CROOKSHANK, M.D.Lond.(¹)

"The evidence . . . so strong that the relations of mind and nervous structure are such that the cessation of the one accompanies dissolution of the other, while . . . with death there lapses both the consciousness of existence and the consciousness of having existed."

"Life is a continuous adjustment of inner relations to outer relations. Mind emerges . . . as fast as the adjustment becomes more extended, more involved, and more complete."

"If mind has been actually built up by this process, it can be, if not actually, yet theoretically, unbuilt by a reverse process. If it is composed of inner relations adjusted to outer relations, then it can be resolved into such inner relations."

HERBERT SPENCER: *Autobiography*, vol. i, p. 471.