stupor of dementia præcox, on the other hand, is more or less complete, often seeming to extinguish all mental activity, and is not only not consequent on depressive delusions, but sometimes immediately follows a stage of excitement. Moreover, the dementia-præcox patient retains as a rule only a hazy memory of his thoughts or condition while in the stupor, but the true melancholiac has usually a full recollection of a dominating delusion at that time.

The excitement and the stupor of dementia præcox have, however, their closest counterparts in the mania and stupor of dementia paralytica, a fact which suggests the deep-seated nature of the malady, but the nature of the prodromes and the absence, from dementia præcox, of memory defect, pupillary irregularities, increased reflex excitability, tongue tremor, and other motor complications, will usually make clear the diagnosis.

It is sometimes difficult, as Christian points out, to distinguish certain advanced cases of dementia præcox from imbeciles or idiots. The appearance and mental status of each are often so much alike that, in the absence of information as to whether the arrest of mental development occurred in infancy or in adolescence, dements of this class often pass for imbeciles. All that can be said is that the imbecile is more likely to show stigmata or malformations than the dement, and that the latter sometimes affords glimpses of a former intelligence which never appear in the imbecile. Fortunately such an error is immaterial, as it cannot affect the care or treatment of the patient.

The diagnosis of paranoid conditions is sometimes difficult, but it is rare for true paranoia, a post-developmental disease, to culminate before the thirtieth year. The essence of paranoia is also absent in these states, viz.: a gradually evolved and logically elaborated set of delusions which exclusively and unchangeably dominate the entire psychic life. In place of this we have a rather sudden appearance of new conditions, and a variable and unsystematized delusional state, whose only likeness to paranoia is the persecutory nature of the morbid ideas. There is also in these hybrid states an absence of physical and mental stigmata of degeneration. True paranoia, moreover, does not end in dementia. It is more difficult to distinguish the paranoid form of dementia præcox from a form of paranoia occurring in maturity which consists of a marked persecutory delusional derangement of rapid course ending in dementia. The reported cases and those we have observed do not show the signs of dementia at the onset of the disease, and lack the variability, superficiality, inconsistency, and remissions, which mark dementia præcox. Unfortunately a few competent observers have mistaken these "dementing" paranoias of mature life for dementia præcox, thus encouraging the belief that this disease whose essence is adolescence may frequently occur at a more advanced age, and also obscuring its true nature.

PROGNOSIS AND PROGRESS.—It is necessary to discriminate between the immediate and the ultimate prognosis of dementia præcox, for the two are widely different. Most first attacks, especially if pronounced, result in what are considered by people in general and appear in hospital statistics as recoveries. They are, as has been explained, remissions, which vary greatly in completeness and duration. In a certain proportion—Kraepelin estimates it at thirteen per cent.—all symptoms of disease so completely disappear that the recovered patient can again fill his accustomed station in life, practically, as well as before. These individuals, however, never appear entirely the same in the opinion of near relatives, in some detail of judgment, disposition, conduct, or habits. Their endurance, also, is apt to be less. Even these cases may relapse after many years and sink into permanent dementia, and one can never feel sure that a permanent recovery—which is a rare event in dementia præcox—has taken place. The other extreme is the transient remission, in which the patients are happy, easily pleased and irritated, excitable, more childish than before the illness, and very soon fatigued in mind and body. They experience a relapse very soon after leaving the hospital, from which time the deterioration is rapid. Intermediate cases live comfortably perhaps for two, three, or more years, but on a much lower level of mental and bodily power and mental capacity than before the attack. A few are able to earn a moderate livelihood, and find a certain satisfaction in life, but all are regarded as failures by their friends, have lost their spontaneity and most of their interest, and, being unable to play their part in life, are more or less solitary, decline advances, and come to be regarded as unsociable or stupid. They are also very often peculiar in conduct, inconsiderate, irritable, perhaps boisterous, and ignorant of their real condition. Such patients are readily imposed on, and are sometimes as pliable as imbeciles. Girls in this stage of the disease are often and easily seduced and give birth to illegitimate children. It is usually safe to predict, in any patient originally of good mind, who has had good care, "recovery" or decided improvement in the course of a year from the beginning of the active symptoms of the first attack, but it is most difficult to foretell with certainty the character or length of the remission in any case. Severe symptoms, if of the acute order, are no bar to temporary "recovery," and stupor, however profound, especially if of comparatively sudden onset and not markedly katatonic, betokens a good remission, which is, we believe, more likely to be an extended one than after any other form, although the cases in which confusion, mania, and melancholia predominate are also frequently followed by long intervals of comparative mental health.

The cases that are classed in this article as purely hebephrenic are milder and less decided in their manifestations and more likely to decline gradually into permanent dementia, not necessarily deep, without remission of any sort or with an occasional brief interval of lucidity. Profound stupor, although less rarely, may without change, except for flashes of intelligence, deepen into extreme and helpless dementia with fixed postures. Of the cases which have come under the writer's notice, those in which the acute condition was prolonged beyond a year and a half without remission have gone steadily on to dementia. Increasing mental inactivity, fixed manners, and stereotypy appear to betoken chronicity.

There is no doubt of the ultimate prognosis in the large majority of the victims of dementia præcox, however encouraging may seem the outlook on the patient's recovery from the original attack. Another attack sooner or later occurs, others follow at intervals, and the mind rapidly deteriorates until a condition of dementia results, which is usually so extreme as to require constant hospital care or its equivalent. This terminal dementia is often marked by exacerbations of excitement, depressions, and anergic states which are the rudiments of the original acute manifestations which are characteristic of the disease. These patients form a large proportion of the chronic dements in institutions. All, however, reach a stationary condition through the arrest of the cortical degeneration, and remain at different levels of mental reduction. A small proportion stop short of extreme dementia, and live in considerable comfort, satisfaction, even enjoyment, the life of imbeciles of the higher grades.

The progress of the form of degeneration peculiar to dementia præcox may be (1st) progressive and subacute without critical episodes; (2d) slow at first, then rapid after a single acute episode; (3d) very slow and marked by numerous acute episodes (Finzi and Vedrani).

PATHOLOGICAL ANATOMY.—Kahlbaum's admission that the pathological anatomy of "katatonia" had yet to be made is, unfortunately, equally true to-day of its parent disease, dementia præcox. What data we possess in the way of discovered lesions are very few in number and far from uniform. Many writers make no allusion to the pathology whatever. All that it is safe to say is that the essential mental weakness can be explained only by changes in the cortex. Altzheimer, in fact, describes marked alterations in the cortex, especially in the deep layers, in a few cases of collapse delirium which had presented the clinical features of katatonia. Auto-intoxication may account for some of these cases which are due to febrile and other forms of exhaustion and appear as

acute confusional conditions. Most of the pathological findings pertain to the profoundest mental state—stupor. Whitwell has attempted to explain its pathological and clinical signs by the congenitally diminished calibre of the blood-vessels. Kiernan finds a great analogy between the state of the brain observed in this condition and that found in cases of typhoid fever, but the essential and characteristic pathology of the disease is, according to him, a primary disturbance in the vaso-motor centres producing sanguineous stasis, and this, he maintains, is the point of departure of the whole morbid process.

Etoc-Demazy adduces evidences of general cerebral œdema from the autopsies of patients dying in stupor. (See also *IV. Insanity: General Pathology.*)

TREATMENT.—Of all the means for benefiting these patients preventive treatment is the most likely to be efficacious and the least apt to be employed. It is, nevertheless, possible for physicians to sow a seed of precaution by disseminating the truth regarding the dangers of adolescence that lie in the path of those who inherit or have acquired a predisposition to insanity, or are constantly exposed to exhausting influences. Intellectual overwork, the bugbear of most parents, is in itself a rare cause of mental breakdown, and in the writer's experience has never appeared except as a minor, contributing factor. It is the disadvantages under which study is being pursued—viz., late hours, outside work, insufficient food, anxiety, excess, unhealthy or distracting home influences—that have been chiefly responsible for the disaster. Clouston's "General Principles of Prevention" are practical and to the point. "Build up the bone and fat and muscle, especially the fat, by means known to us, during the period of growth and development. Make fresh air the breath of life to the young. Develop lower centres rather than higher when there is bad heredity. Don't give too much flesh and nitrogenous food during growth and adolescence. . . . . Avoid alcohol and nervous stimulants absolutely if possible. Do not cultivate, rather restrain the imaginative and artistic faculties and sensitiveness and the idealisms generally in cases where such tend to appear too early and too keenly. They will be rooted on a better brain and body basis if they come later. Cultivate and insist on orderliness and method in all things. The weakly neurotics are always disorderly, unbusinesslike, and unsystematic. Fatness, self-control, orderliness are the three most important qualities for them to aim at."

There is also, we firmly believe, ground for hope of recovery at the very outset of the disease, and it is here that the immense importance of a knowledge of the earliest signs of cerebral fatigue become evident. The advantages to come of early recognition of dementia paralytica (a structural disease considered to be invariably fatal) are often and not without reason insisted upon. Is it not much more likely that good may come from the recognition of the prodromes in dementia præcox, a functional disease of at least long remissions and non-constitutional etiology in many cases? It is for this reason that we have dwelt so particularly on the minor mental manifestations of the disease in its incipient stage. We look with confidence to the time when cases recognized early by the alienist, while yet the patient is comparatively comfortable, may be saved from an attack by well-directed medical oversight and regulation of his habits and surroundings, insisting chiefly on rest of mind and body, abundant food, and life in the open air away from home. What might be called simple hebephrenic states that, under proper guidance, never culminate in insanity, occasionally reach the alienist and strengthen our belief in greater curability of the disease, at least among the well-to-do. When the disease has more fully developed it is well not to temporize. The danger of the patient's obedience to a sudden impulse to fatal or other overt acts, or an outbreak of excitement, is great as soon as the actually depressed or excited state appears, and proper precautions should be taken at once. The hospital is the only safe place short of single private care with special nurses and a physician in constant attendance, for such patients when once a suicidal or homicidal tendency has developed. Throughout the attack the main reliance is the patient's absence from home and relatives, experienced medical oversight and nursing, freedom from all disturbing influences, especially meddlesome attempts to entertain, quiet surroundings, regular exercise out-of-doors in almost all weathers, baths, and above all a good supply of nutritious food. Nothing is worse for so-called mild cases than to send them to travel. They are quite sure soon to return after unpleasant experiences, exhausted in body and mind, and in a far worse condition than before. Brain-rest, not diversion, is the supreme indication. Intervals between the attacks may often be prolonged by the physician if he is kept informed of the patient's condition. These young patients often emerge quickly from an attack, but while mentally clear are far from strong for some time. They require, in this condition, to be kept a longer time under immediate medical direction than the relatives are usually willing to allow, and thus are exposed to the danger of a speedy relapse.

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XVI. INSANITY, SENILE.—Under this general term are rather indefinitely grouped all those psychoses which develop in persons past the meridian of life and which are dependent upon those subtle changes in structure and function that mark the progress of declining years. Naturally enough we should not include in this group those cases of continuous or intermittent psychoses which begin in previous life and last to old age; nor yet, again, those instances of mental alienation in the aged which are due to intoxications, infections, or gross cerebral lesions described elsewhere in this group of articles; although, certainly, all these forms of mental disease might take on "senile" characters from coming within the sphere of influence of the characteristic senile changes. Our province rather is to depict the mental peculiarities coincident with these subtle physical changes; for we cannot doubt but that the primary variations, apparently only of function, are really dependent upon structural changes so fine as to elude the scrutiny of the microscope, but similar in kind to those which, later on in the disease, are more plainly discerned. And herein do we find our justification for including under this one head many cases which at first sight might appear essentially different. It may be that in the future, with closer pathological knowledge of these physical changes, defi-

BIBLIOTECA

nite subgroups or essentially different forms of brain degeneration may be separated from this somewhat promiscuous class; but for the present they are best considered together from a clinical standpoint. The whole course of the disease is chronic, with a marked tendency to a steadily progressive dementia.

It is well known that some people show the effects of their burden of years much earlier than others. From various causes, which will be considered later, these effects in certain individuals are most marked upon the nervous system, and include a pathological involution of the mental faculties. Thus the whole series of psychoses under discussion may be considered under the still wider term of involution psychoses. As this involution, however, sometimes commences quite early in adult life and affects too large and varied a class for separate discussion it has seemed best to restrict the bounds of the present chapter to include only those cases which commence after the forty-seventh year of life. The reader is referred to the chapter under Melancholia for a further consideration of this topic, as a large number of cases of typical melancholia really belong to this epoch in life and are but evidences of mental involution.

Senile insanity commences insidiously, and the early years of many cases present a marked clinical contrast to their later ones. This has led to an arbitrary but convenient subdivision of the subject into the *presenile* forms and the *senile* forms proper. Presenile insanity includes those cases which break down comparatively early, between the forty-seventh and the sixtieth years of life, while senile insanity proper is seen in those still older.

A. Presenile Insanity.—Presenile insanity is seen in a rather limited group of cases, which exhibit premature failure of their mental powers by an evident weakening of the judgment, undue emotionalism, and varied persecutory delusions. The onset is gradual; the clinical course, subacute or chronic; the usual outcome, a mild dementia.

There is usually a considerable period of vague premonitory symptoms. Imperceptibly a change takes place in the *disposition* and *habits* of the patients. They become more quiet, are unsociable, discontented, uneasy, and restless, sad without cause, irritable, and suspicious; have unreasonable outbursts of anger or tears, are disinclined to exertion. Their *memory* for passing events grows less acute. *Consciousness* is intact, and they are able to *orient* themselves perfectly. The *will* is seemingly unimpaired, but really they are less able to control their emotions and desires than heretofore. *Judgment* early shows considerable damage. They do not yet have hallucinations or delusions, although these are foreshadowed in their unreasonable whims and suspicions. There is usually some disturbance of digestion and general nutrition, and their power of endurance rapidly fails. The patients are really not yet insane, but are showing the first signs of mental inco-ordination: evidences of physiological involution of the faculties coming on at a prematurely early period, and with perhaps pathological rapidity; indications, in fact, of an essentially pathological process at work. They become extremely selfish and self-centred, introspective, and soon are definitely hypochondriacal. This attitude, with their general suspicions, forms the basis for their first delusions. They appear oversensitive to cold and complain of various disturbing conditions, "fleeting rheumatic pains," cough, hiccough, belchings, disagreeable feelings in the head and back, dizzy spells, distressing dreams, peculiar sensations in the eyes, and ringing in the ears. These are so numerous and absorb so much of their attention, are so changeable and easily allayed, as to suggest an hysterical condition. But more uncommon and unreasonable complaints point to the essentially delusional fabric of the whole group of symptoms. They believe that something has happened and has taken away all their strength, that their brain has been lost or been drawn out through the spinal cord, that they have no stomach, that nothing ever passes the bowels, that their heart does not beat, and that they live without any circulation of the blood. Things do not appear the same to them, and they immediately suspect foul play. A forgotten piece of wearing apparel has been stolen. If it is found, they cannot believe it is the right one, but a clever substitute, and still accuse the supposed thief. At other times poison is put in the food, they taste alum on their meat, saltpetre on the toast. They are convinced that some one is planning a deep game against them, and do foolish things to overthrow their schemes. One patient had a large hearth stone removed to uncover the dynamite secreted beneath. They do not usually name their enemies, but seem content with vague suspicions. When they do, however, they generally accuse some near friend or relative of enmity or unfaithfulness. In fact, the idea of conjugal infidelity is rather common with them; although it does not seem to produce the degree of excitement that would naturally be expected. One's wife is common property to a number of his neighbors, makes secret "dates" with the hired man. The husband makes business trips that he may get away with his paramour, he is too intimate with the servant girl, and, in fact, is thought to be flirting with all the women of her acquaintance.

Hallucinations sometimes appear with the delusions, but more often not until later. The patient feels by a peculiar tingling in her hand that her husband has met with an accident, she can feel the corrosive action of supposed poison in the stomach; another patient says that the meat is disgustingly "embalmed," he can taste the chemical preservative; he sees dark phantom shapes at night, sometimes robbers come into the room and reach over the bed, or he sees them down-stairs getting away with their plunder; he hears his wife talking with another man in an adjoining bed, overhears plots in the next room, his daughter's screams as she is being carried off.

It is to be especially noted that these delusions and hallucinations are very transitory and ever changing. In this early stage outrageous conceptions may seem to call forth no particular demonstration nor incite to vigorous measures to pursue the culprit. This is associated, it may be, with such calm and otherwise reasonable conversation as might lead one to suspect the patients did not believe what they were saying themselves. Often, again, a few soothing words may quiet all their agitation and they will seemingly be convinced that what they said was untrue; but a moment afterward they are relating some similar terrible thing. They have been persuaded to agree with their companion, but are not truly convinced, as they never fully realize the full gravity of their accusations. And this, too, accounts for their showing so little spite in action. It must also be remarked that they do not fasten their spite permanently upon any one person. Their enemies change almost as frequently as the content of their delusions, and the supposed murderer of a man's daughter may enter the room and soon win the confidence and esteem of the old man.

All this is assisted by the very evident impairment in *memory*, especially for the recent past. The details of events long past, even those of childhood, may be ready and accurate, while they may not know what day of the week it is nor whether they have seen you for some days or not. In relating past events they are apt to get side-tracked, to wander off into endless repetitions and add thereto, under the influence of delusions, most improbable and impossible inaccuracies. The *train of thought* is interrupted, but accompanied with such a very remarkable acceptance of the most absurd notions as plainly indicates very serious impairment in *judgment*. The *mood* of these patients is variable. At first they are apt to be quiet and sad, and may rarely even attempt suicide. Generally, however, they soon get irritable, fussy, and dictatory, with considerable increase in self-esteem. They grow more talkative, and when excited may become very noisy and demonstrative and talk in the most childishly obscene, profane, and insulting manner. This general elation of spirits causes them often to be a bore to the community and a trial to their friends. They run about as imaginative retailers of gossip, are sad and angry by

turns, are easily cajoled, make many confidences, and ask much advice, but follow none. Rarely they may be sad and seclude themselves for a time and refuse food, and again they may be destructive and violent.

As the general impairment of the faculties progresses, their delusions become more absurd, their emotional excitement or depression reaches wider limits, their conduct becomes more unbearable, and the necessity for suitable restraint more self-evident in the interest of all parties. The insane jealousy already mentioned reaches extreme bounds. Detectives are hired to watch the suspected parties; incriminating and circumstantial fabrications are told to the police and friends; they hear all manner of incriminating conversations, and see the guilty parties together at night. Their enemies are hounding them, have torn their children to pieces, and are just on the point of attacking themselves. It is a common thing for God to take them into His confidences and warn them of things about to happen; they hear His voice, see Him, feel His presence beside them. At times they may be so absorbed with these hallucinations as to appear indifferent to everything and slightly confused. However, no definite confusional type of the disease is so noticeable as that found in the insanity of the later epoch.

The *course* shows frequent variations, with occasional remissions, when for a time the delusions may be relegated to the background. But even then the deterioration in their natural acuteness plainly reveals the considerable degree of dementia remaining. Sooner or later the cases become hopelessly childish and weakminded. The prognosis in respect to life is good, but for ultimate complete mental recovery it is generally hopeless.

The chief factor in the *etiology* appears to be hereditary predisposition. Some have asserted that where a mental breakdown is postponed to the later periods of life, hereditary taint must be extremely weak and problematical, as it necessarily requires a very stable brain to withstand successfully the strains of early and middle life. Though cleverly urged, we have found the facts at variance with this theory. It would seem rather that, in certain favorably predisposed individuals, the normal physiological changes incident to old age set in much sooner than usual and with pathological significance on account of their hereditary instability. Of course we would not minimize the various adjuvant causes usually leading to sclerosis of the arteries and general failure in brain nutrition.

The *diagnosis* is sometimes more difficult than would at first appear. We have to separate these from the numerous cases of mild recoverable melancholias which occur at this epoch and which have been treated of elsewhere. The gradual onset, the tendency to emotionalism, the peculiarly changeable delusions, which are mostly of the persecutory order but which are not systematized and fixed against a definite object, and, finally, the serious and progressive impairment in the judgment are the chief points to be relied upon in distinguishing this affection. Sometimes these cases are classed under paranoia, but the changeability of their delusions and lack of any real attempt to pursue the object of their suspicions we consider sufficient distinctions. Their periods of moodiness, the refusal of food, and sudden violence at times have suggested to some the onset of dementia præcox. These acts, however, are purposeful rather than merely impulsive, and are evidences of increased emotionalism rather than of destruction of feelings; and, finally, the subsequent terminal dementia is of a type similar to that of ordinary feeble old age, plus delusions, rather than the blankness of the imbecile.

Naturally enough, the *treatment* resolves itself into the study of how best to make the patients comfortable and insure the preservation of their physical powers. This is best done generally in some institution, public or private, where the unexciting life and better control over the personal habits and hygiene of these patients insure less trouble and difficulty for both patient and friends, and really prolong life in increased comfort in most instances. However, many of these cases, especially after they have grown considerably demented, can often be quite suitably cared for at home if properly trained attendants can be provided. It seems folly, with our knowledge of the disease, to seek any specific for the general mental affection.

B. Senile Insanity, Proper.—Under this term we group a large number of cases in which the normal physiological involution of the faculties expected after sixty years of age has progressed to pathological limits. It has been customary with many to include under this term various cases of mental depression and exaltation which often run rather typical courses but slightly modified by the general failure. These are best considered, however, as late cases of melancholia, of manic-depressive insanity, or of circular insanity, and as such the reader is referred to them under their appropriate heads. Senile delirium might with justice be relegated to the section on confusional insanity, but as it seems to depend directly upon a rather sudden senile breakdown, it will be dealt with here in brief. We have also those cases in real old age which present a group of symptoms similar to those described under presenile insanity. These will be considered separately under senile persecution. There remain, then, the numerous cases of steady mental deterioration comprised under senile dementia, with those exhibiting a very grave form of this affection grouped together under senile confusion.

Clinically, then, there are presented: 1. Senile Dementia. 2. Senile Confusion. 3. Senile Delirium. 4. Senile Persecution.

1. *Senile Dementia.*—Senile dementia is characterized especially by the gradual onset and progress of a general mental deterioration. None of the mental faculties are at first lost; they become blunted, and this accounts for the peculiar coloring of the whole clinical picture.

Perception may be good, but the full comprehension of details is lacking. In this way their realization of time, of place, and of persons may be at fault. They get lost easily, even at home, become lacking in animation and general mental acuteness, appear stupid, sleepy, uninteresting, and uninterested. Besides the clouded *orientation*, the *train of thought* is interrupted. They cannot read with understanding nor follow a discourse; in fact, they lose the thread of ordinary conversation or do not see the point at issue. They lose their power of initiative, their creative faculty fails, they cannot adapt themselves to new surroundings or conditions, nor change their point of view. They think in a regular routine according to their accustomed habits, lose their flexibility of thought and power to change easily at will from one subject to another, do not modify their opinions nor further elaborate previous conceptions. Thus their conversation flows in one tedious round of ever-contracting ideas, which are brought in everywhere without regard to their connection or bearing. The elaboration of ideas and perceptions into new conceptions, the power of analysis and synthesis of thought, the formation of opinions and judgments are hopelessly impaired. This explains their lack of full comprehension of passing events, their proverbial "conservatism," and their inability clearly to see and withstand the delusions which naturally come to them.

Great impairment of memory is apparent, especially for the recent past. Ideas long dormant, however, may be revived, and circumstantial and detailed accounts of happenings long past are often remembered with remarkable clearness, when most important happenings transpiring to themselves or others seem to find no lodgment whatever in their brains. One will remember where he lived as a boy, who were his school-fellows, recount the details of his marriage arrangements, but be absolutely ignorant of where he is or of the fact that he was brought from his home the day before. In fact, he is apt to live wholly in the past, and mistakes his companions for his former long-lost associates. Occasionally, when defective remembrance leaves unmistakable gaps in narration, the missing links are filled in with inventions without any realization of their fictitiousness. Thus, in process of time, a well-worn favorite story, by silent elision of the

BIBLIOTECA

main facts and insertions, may become a totally different and incomprehensible fabrication. As the memory grows weaker, the circle of ideas narrows until the impoverishment of thought and diction is evident in their painfully monotonous remarks.

Delusions are numerous even in the early stages of the disease, but call forth no particular activity until the se-

Fig. 2839.—Senile Dementia of Light Grade. Patient vigorous, neat, and orderly but deluded.

vere disturbances of the emotional life take place. At first they are wont to imagine that some evil is to befall them, or are constantly worrying about their health. This may be associated with actions and ideas of childish self-importance. A common delusion is that their food does not digest and that nothing passes from the bowels, that their enemies have ruined and killed them or left them for dead. They may even make childish preparations for suicide, and somewhat infrequently may accomplish it. Hallucinations of sight and hearing are sometimes very prominent and fantastic. They see changing colored pictures on their bedroom walls at night, likenesses of dead friends or relatives, landscapes and gardens; they hear angels, recognize their friends' voices, hear threatenings and preparations for their own destruction.

The general trend of the emotional life is toward complete blunting of the sensibilities and desires, the merely animal wants dominating their higher emotions until complete uniformity is reached. This process, however, is often marked with great fluctuations in the tide of the emotions, which, when influenced by their delusions, may cause widespread devastation and distress. The patients grow silent and indifferent, are not influenced so acutely by the pleasures or sorrows of existence, grow self-centred and more jealous of their own bodily wants, reserve their choicest blessings for any Jacob who will satisfy their hunger, bear with the fortitude of indifference even a Job's losses, but are up in arms and rebellious at the least attempt to cut off their supply of tobacco. Again, the patient's humor changes and there is evident extreme satisfaction, childish joy, and unnatural susceptibility to great fluctuations in humor. One moment he is irritable, dogmatic, and impatient; the next, for the slightest cause, he is in tears and despondency; a moment later, radiant and laughing. During these periods of elation of spirits, the passions, untrammelled by the checks of judgment and reason, are apt to run riot. This is seen in their outbursts of anger with vociferous and unbridled swearing and abuse, and especially in the increase of their sexual impulses. They often contract foolish marriages or content themselves with indecent exposure, masturbation, and obscene talk. At times they even make indecent assaults, especially upon young girls.

Gradually this mood may be more continuous and bring about for a considerable period great changes in conduct and action. Extreme restlessness and irritability are developed, they quarrel constantly with their companions, are ever working or fussing over imaginary work, talk a great deal, threaten, and sometimes become violent. They run about the neighborhood, collect heaps of trash, meet with accidents and mishaps, and are a constant trial to their guardians. At night their greatest restlessness is manifest. They get up and wander about the house, often with serious danger of setting fires, rummage around and tire themselves all out, and may be quiet and sleepy the next day. They grow neglectful of their toilet and even of ordinary cleanliness, and sometimes, if uncared for, become most distressingly filthy.

The physical changes which accompany this mental degeneration indicate a serious decline in the general health. The appetite grows poor, nutrition suffers, the subcutaneous fat disappears, the skin becomes wrinkled and yellow, with pigmented areas and spots of keratosis senilis, which may break down into carcinomatous degeneration. Occasionally there is troublesome itching of the skin—pruritus senilis. The teeth are lost and the alveolar processes of the lower jaw are absorbed, with characteristic change in its shape and consequent falling in of the lips. The muscles atrophy and weaken, the bones become more brittle, the arteries harden and are distinctly visible in their tortuous course up the emaciated limbs. The pulse grows weak and slow and is apt to be irregular. The hair becomes sparse, coarser, and turns gray, with, possibly, the exception of that of the eyebrows. The eyes grow far-sighted, then gradually get dim from clouding of the lens. Arcus senilis is common. The pupils are not infrequently contracted, unequal, and react sluggishly or not at all. The tendon reflexes are generally increased, sometimes decreased, and occasionally absent. The superficial reflexes are wont to be uniformly diminished. The voice changes gradually to a peculiar, weak shrillness or to a husky indistinctness accompanied by other symptoms of aphasia. Headaches, dizziness, hemianæsthesia, ptosis, and hemiparesis of the tongue, face, or extremities often attest the serious disturbance of brain

Fig. 2840.—A Second Instance of Senile Dementia of Light Grade.

nutrition. They become hard of hearing, clumsy, tremulous, and uncertain in their motions. After the onset of mental symptoms the physical signs of age are apt to progress much more rapidly, so that a patient may within

a few months look many years older than he really is. Many of these physical peculiarities were strikingly shown in the subjects of the accompanying illustrations.

2. *Senile Confusion.*—When the process of mental deterioration above described has advanced toward its final

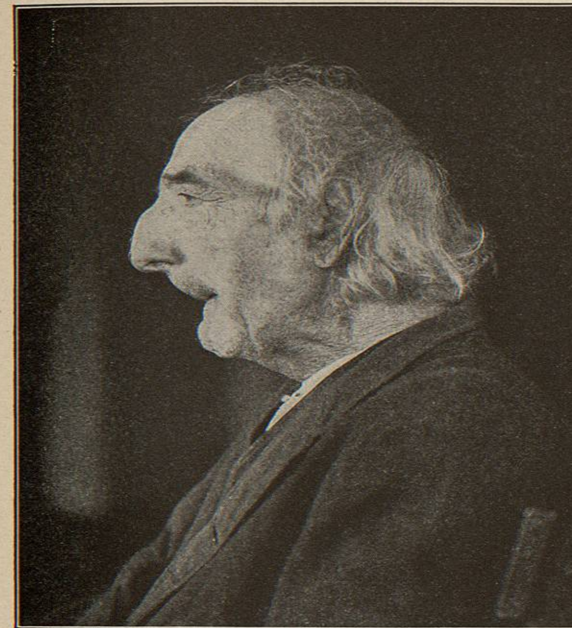

Fig. 2841.—Senile Dementia of Severe Grade. Patient feeble, careless, and untidy.

limits, we may have the picture presented of what is usually classed as senile confusion. All idea of time, place, and the recognition of their companions and relatives is lost to these patients, they do not know how old they are nor where they live, how many children they have, nor whether they are married or not. The train of thought is hopelessly disjointed. They do not seem to have any motives for action and the scope of their ideas is increasingly narrowed. Single phrases and sometimes words or syllables are often repeated over and over with senseless monotony and sometimes with a certain rhythmical cadence. There is evident, also, frequent elision of the nouns in speech or writing, and other signs of amnesic or motor aphasia.

Often fantastic delusions of grandeur or of persecution are exhibited. One old patient would stop in his fruitless hunt "for the cows" about the ward, and attempt to harangue with silly pomposity and perfectly meaningless phrases an imaginary audience of grangers. Others are depressed, with hypochondriacal, nihilistic notions—the remnants, perhaps, of a former more active melancholia. Every idea that it is possible for them to conceive is seemingly told and believed in as fact.

Hallucinations of sight are not uncommon, especially at night, and vary according to the mood of the patient. This varies constantly. One moment they are silent, morose, and woe-begone; the next, elated and childishly cheerful; and then again, suddenly, without apparent cause, are sad and lachrymose. At night they show special restlessness. They get out of bed repeatedly, wrap up their bedding and other clothing, and wish to start to walk home. They tear the sheets, smear things, and, if not carefully watched, become disgustingly filthy and destructive. Their appetite wanes and often they refuse food. They may become so weak that they cannot get out of bed for weeks or months, but pass their final days in a state of semi-consciousness or mental twilight without appearance of suffering or desire, the merest wreck of their former physical and mental greatness.

3. *Senile Delirium.*—This is really an exhaustion psychosis from a rather sudden senile breaking up, accompanied by active delusions, hallucinations, mental confusion, and generally physical collapse.

As a rule, the symptoms progress rapidly when once developed, although various lighter signs of senile degeneration may have been evident for weeks or months previously. The onset is often determined by some acute sickness, accident, or mental shock. Thus we find it following rather abruptly the partial convalescence from la grippe, summer diarrhœa, a fall or blow on the head, apoplectiform seizure, or more rarely from bad news or worriment.

Within a few days or weeks the consciousness of the patients becomes completely clouded. They do not recognize their friends nor realize what is going on about them. There is no continuity of thought, but entire irrelevance and incoherence of speech and action. They may not know whether it is daylight or darkness, whether they are hungry or have just eaten, neglect the calls of nature, may soon pass into great motor restlessness, and rapidly sink into lethal exhaustion.

In their talk they manifest frequent aphasic disturbances—especially the elision and slurring of words, the unintentional gaps in meaning, the naming of objects wrongly even when corrected. Multitudinous delusions are evident, sometimes of a persecutory or sad character, but often of a grand or joyful content. They are poisoned, bewitched, about to be hanged, torn to pieces, castrated, or set up as a target. Their children have been destroyed, there is no hope for mercy, they are eternally

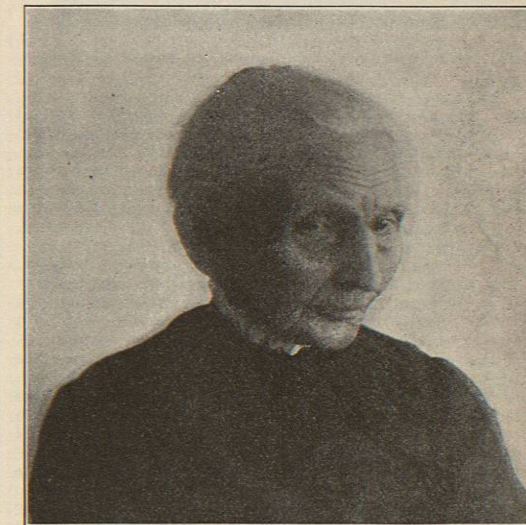

Fig. 2842.—Another Case of Senile Dementia of Severe Grade.

lost, are too bad even for Satan's care. They hear loud calls and reproaches, singing, threatenings, hear their scaffold being built, see knives and swords, poison in the food. All these ideas are not told about soberly; they are rather inferred from their disconnected utterances and from their actions in trying to avoid the consequences feared. In fact, their talk may degenerate into mere meaningless sounds and senseless repetitions of the same sounds (echolaly). The mood of the patients is usually depressed and worried, but may become calm and serene or joyously happy. There is almost always great motor