

CLINICAL LECTURES

ON

MENTAL AND CEREBRAL DISEASES.

By J. CRICHTON BROWNE, M.D., F.R.S.E.,

Medical Director, West Riding Asylum; and Lecturer on Mental Diseases to the Leeds School of Medicine.

V.—SENILE DEMENTIA.

GENTLEMEN,—Aged people, as well as the young and adults, are liable to various distinct forms of mental disease, distinct in their origin, in their progress, and in their treatment; and it is an error, therefore, to speak of senile insanity as if it were a pathological entity, and to group under such a term conditions which have really nothing in common simply because they occur in the last decade of life. I have specially pointed out to you to-day three cases, and I would now briefly recapitulate the symptoms which we noted in each of them. In the first place, you saw, in Ward 21, Elizabeth M., who is 71 years of age, and you could not fail to remark that she was in a state of great mental distress. She sat wringing her hands, rocking her body, and whimpering from time to time. Her expression of countenance was terribly woe-begone, and, when I questioned her, she freely acknowledged that she was uneasy and wretched. She told you that she was accused of having taken away the character of her nephew, and of having murdered some one, and that she was in momentary expectation of the officers of justice, who would convey her to prison and thence to the assizes, to be tried on the capital charge. This it was, she said, that preyed upon her mind, deprived her of rest, and took away her appetite. But, however much the fear of detection and punishment might distress her, it did not blunt her intelligence. She at once understood all that was said to her, and answered quickly and clearly. Her memory, as tested by the information contained in the case-book, was found to be in excellent working order. She correctly stated her age, the date of her admission to the asylum, and numerous incidents in her past life, informing us that she had been a housekeeper, and had lost a good situation which she had long held immediately before the fears which she now suffers from first assailed her. You remarked that she was a feeble, withered-looking old woman, with pale skin and mucous membranes; that her pulse was weak and compressible; that there was a soft *bruit* with the first sound of the heart at the base, but that there was no arcus senilis nor cording of arteries.

In the same ward, Mary L., 87 years of age, was next brought before you, and you must have been struck with the contrast which she presented to Elizabeth M. She was all smiles and hilarity, wandered restlessly about, addressing each of our party, and talking so rapidly that it was difficult to make out what she said. The gist of her conversation, however, was that she wished us all to dine with her, and that she was about to confer great benefits on each. She appeared to talk incoherently, but analysis revealed that there was a connection in all her rambling discourse. When spoken to quietly, she gave no heed to what was said; but, when a question was asked very emphatically, she would reply to it and then rush off again in her headlong monologue. She was a little emaciated woman, with a flushed face, a hot head, and a pulse of 90. Arcus senilis was visible in both eyes, and both the radial and temporal arteries felt hard under the finger. The records which were read to you show that she has been an inmate of this asylum for seven years, and that she is subject to attacks of excitement similar to that through which she is now passing about every three months, these attacks being easily controlled by ergot. Between the attacks, she is said to be an industrious, contented, brisk old woman, with faculties singularly clear and vigorous considering her advanced age.

Passing to the male wards, you encountered, in No. 2, Joseph B., aged 74, pawnbroker from Leeds, who, on being interrogated, gave the following account of himself. "I am 22 years old, and came here this morning, having walked over from Doncaster. I am a schoolmaster by trade, and have been at all the best colleges in London. This is Monday, and to-morrow will be Friday. I am so poorly that my lips cling together. I have no money, but can get some from my friend Mr. L." After pausing a few moments, I again put the same series of questions to Joseph B., and elicited the following somewhat inconsistent version. "I am 40 years old, and a married man. My wife and I came here last Sunday from New Wortley. I am in the glove and hosiery trade, and was trained in Leeds. This is Tuesday, and to-morrow will be Wednesday. I never was in better health in all my

life. I should have £30 in my pocket, but I can't find it." Further questions followed, and the result of the examination must have been to satisfy you that Joseph B.'s memory is completely gone, and that his mind is generally much enfeebled. Watching the old man's manner, you might have thought that he was explaining himself with great accuracy. He was neither excited nor depressed. He replied to questions readily and courteously, but his whole discourse was inaccurate and incoherent. His features, much wrinkled, still wore an expression of intelligence. In his eyes, the arcus senilis was distinctly seen, while on his temples the temporal arteries were observed to stand out prominently and to pursue a very tortuous course. Touched by the fingers, these arteries were felt to be hard and unyielding, as were also the radial arteries at the wrist. The hands of Joseph B. trembled much, and his gait, when he walked, was tottering, and his whole aspect was that of an infirm, broken-down old man. Referring to the case-book, we ascertained that Joseph B., having suffered reverses in business, showed signs of mental decay two years ago. His memory gradually failed; he became childish and physically weak, and was ultimately sent to the asylum because he was restless at nights and was constantly wandering away from home and losing himself. It is reported of him that he is always cheerful and tranquil, but that he is confused in his ideas, and can never tell where he is, nor recall any recent experiences. He is constantly mistaking the identity of the persons around him, and making ridiculous blunders. He is occasionally sleepless and restless. His appetite is good.

Now, these three patients whose cases we have been recapitulating are all far advanced in life, and by some they might, therefore, be grouped together as instances of senile insanity. But the assemblage of symptoms which each presents is surely very distinctive—so much so as to warrant their separation in anything but a crude and superficial classification. The first patient pointed out to you, Elizabeth M., is obviously labouring under delusional melancholia; the second is as obviously the victim of recurrent mania, and the third is unmistakably affected by senile dementia; for there is one kind of mental derangement which is properly specified by the adjective senile, and that is the fatuity, which is simply an intensification or morbid exaggeration of the mental enfeeblement which is incidental to old age. The human brain, as you know, waxeth old as doth a garment, and there are few, if any, of our race that reach a great age without giving external manifestations of its thread-bare texture. When the allotted boundary of man's days is approached or survived, his eye necessarily grows dim, and his natural force is in some degree abated, and, although in many persons the change which is brought about by the passage of time may be scarcely perceptible, in others it is more conspicuous, and is designated dotage. Now, dotage is simply senile dementia in a mild form, and senile dementia is advanced dotage. In both, the essential condition is a gradual degeneration and decay of the mental faculties, without either maniacal perturbation or melancholic depression.

The chief and earliest characteristic in senile dementia is a failure of memory, especially as to recent events. Long past occurrences, the incidents of youth and boyhood, may be readily recollected, but the affairs of yesterday cannot be recalled. This, in all probability, is due to some dulness of perception and imperfection in the processes of sensation, as well as to an enfeeblement of the conservative powers themselves. With the weakness of memory in the aged, there is also very often weakness of sight and hearing; and, even when these senses are not demonstrably impaired, there is frequently, I believe, some deterioration in their functional activity, so that the impressions they transmit are faint and unenduring, and cannot link themselves with previous mental possessions. Had we an instrument for clinical use by which to measure the rate of nervous conduction, I have no doubt that we should find in the aged an appreciable increase in the time taken by a stimulus to travel along a sensory nerve. And, with that tardier propagation, there must be diminished intensity, and so a less powerful solicitation of attention. But attention is itself enfeebled; it can be directed, but not concentrated, and thus it comes about that the whole process of sensation and perception is vitiated, and that all new impressions made upon the mind are feeble and are speedily obliterated. Deprived of recent acquisitions, the mind busies itself with its older stores. It turns from a confused and indistinct present to a clear and well-ordered past, and, when called into action by an external agency, it makes use of long past experiences. In many patients in this asylum who are advanced in life, you may at all times find this state of matters exemplified. They cannot tell you what happened to them a few hours ago, but they can vividly describe events which occurred at the distance of half a century. If pressed with questions, they will often mix up ancient and modern reminiscences, and produce strange and incongruous combinations, mistaking the identity of the persons around them, and jumbling up places, seasons, and incidents in "a concatenation accordingly".

As senile dementia advances, the failure of memory becomes more extensive and pronounced, the ideas become more confused, and pass from under the control of volition. By no effort, then, can a series of thoughts be connectedly carried on. Apprehension may remain, so that a question asked is understood, and an attempt is made to answer it; but, before the reply can be fully formulated something has turned aside the current of thought, and incoherence is the result. Irrelevancy reigns supreme. The mind is disintegrated, only fragments of intelligence remain. Amidst all this confusion and disjointedness, it is not surprising that delusions should arise. An old man who finds himself, after some great rent in memory, in a large building with numerous rooms and corridors, may be excused for fancying that he has got into a grand hotel, and for deploring that he has no money wherewith to pay for his bed. And an old lady, who is living in the memories of blooming fifteen, may well suspect the motives of companions who administer gin, and insist upon her wearing spectacles. Delusions of suspicion very often arise in senile dementia, and these may be either of a definite type or multiform and various. They are much more frequently the latter. This moment, the patient fancies that he has been swindled; the next, that he has been poisoned, and, the next again, that he has been beaten and abused. Even the delusions of the senile dement are dilapidated. Invariably—and this is the important point in diagnosis—they are associated with obvious failure in perception, memory, apprehension, judgment, and depend really upon errors of sense and reasoning. With the delusions there is sometimes excitement, but this is not mania. The patient is restless and garrulous, but he is at the same time incoherent and demented. No flood of ideas overwhelms him; on the contrary, a mere dribble of thought trickles through him, and his objectless wandering, his cries, and his unintelligible loquacity are only expressive of vague stupor and perplexity.

The final phase of senile dementia is, of course, almost complete abolition of mental power. A question asked is not comprehended; a state of drowsy stupidity is established; the patient is helpless and inattentive to the calls of nature, and then death is not far distant.

In the sphere of the emotions, throughout the whole course of senile dementia, all tends towards bluntness and impotency. The feelings grow narrow and egotistic, and cannot be touched by the joys or sorrows of others. Deep feeling becomes impossible, and the most cherished sentiments, those that seemed bound up with being, drop out of sight. Hatred, a firm adherent, is lost and forgotten; and love, that survives the grave, pales in the misty twilight of senile fatuity. Indifference to everything but personal considerations is the prevailing attitude of mind. You tell an old man in this state that his wife is just dead, and his comment is that it is very cruel of her to go at a time when he wanted his dinner. You intimate to an old woman that her son has succeeded to a fortune, and she hopes that he will send her a pound of tea. Selfish, superficial, inconsequential emotions are alone manifested. The dominant emotion is generally one of vague discontent and querulousness; but sometimes a sprightly hopefulness is uppermost. Just as old people are either crusty or genial, so are senile demented; and of course the prevailing temper of the man comes to the surface in the diseased condition. Then morbid propensities occasionally display themselves; and of these, perversions of the sexual appetite are most frequently met with. Old fatuous men, in whom passion might be supposed to be dead, contract foolish marriages. An octogenarian celibate seeks out an Abishag to comfort his chill decrepitude. Dr. Carpenter has been made acquainted with six cases in which an extraordinary salacity developed itself at an advanced period of life, whilst concurrently with this, or following upon it, there was that kind of unsteadiness of gait which may be held to indicate chronic disease of the cerebellum.

This brings us, gentlemen, to the physical symptoms of senile dementia; and, in dealing with these, I would first speak of the facial expression. Now, although senile dementia is often, as we have seen, profound enough, yet the countenances of those suffering from it are not so expressive of mental obscurity as in other forms of dementia which occur earlier in life, and especially in the dementia which is induced by epilepsy. The fine lines of expression are not smeared out. The fact is, that the faces of old people are tattooed with expressions. Ruling passions, habitual sentiments, dominant moods, have been indelibly stamped upon them. The bent of manner, too, has been so fixed and settled, that it retains some of its pristine characteristics even far into fatuity. It is, however, modified in several ways, and most notably by the muscular weakness and tremor which is an almost constant accompaniment of senile dementia. The figure stoops, the step is uncertain, the gait unsteady, and there is muscular tremor, which is more persistent and regular than in general paralysis, and which affects the hands and arms first, and not the face and tongue. We all know the shaky hand, the tottering gait, the squeaking voice, which are so often ob-

served in the octogenarian, and which constitute the stage tricks for the characterisation of old men. Well, these we have constantly associated with senile mental weakness; sometimes to a slight degree, and sometimes to a remarkable extent. But, however severe these involuntary movements may be, they are not, I think, to be regarded as manifestations of paralysis agitans. That I should class as a neurolytic or functional nervous disorder, indicating heightened excitability in nervous tissue, and therefore curable; whereas these tremors of which we are now speaking are dependent upon organic wasting changes in the brain and spinal cord, and are quite irremediable. As a rule, they affect the whole body, but are most intense in those muscles which are most frequently involved in voluntary movements—those of the hands, arms, neck, and face. The agitation is more violent on one side of the body than on the other; is increased by any attempt at exertion, or emotional excitement, and is diminished by rest and mental tranquillity. It ceases altogether during sleep.

A patient who was in this Asylum about eighteen months ago afforded a good example of senile trembling of the worst type. He was a sexton from Leeds; and, although only sixty years of age, had the aspect of an extremely old man, and laboured under distinct senile dementia. His memory had given way fifteen months before he was brought to this hospital, and had become gradually more and more enfeebled. The calendar was a blank to him; and he could not even be brought to remember the days of the week. His apprehension was slow and imperfect, and his attention could not be fixed. He was restless and ill at ease, for ever wondering where he had got to, and spending most of the night in exploring the four corners of his bed-room. Delusions and hallucinations also distressed him; he was about to die, strange figures gathered round him, and fumes of sulphur invaded his nostrils. Emaciated and haggard, he could not walk about without assistance, his inability to do so being partly owing to weakness, and partly to excessive muscular tremor affecting the whole body, but more decidedly its right half. The shaking continued without intermission throughout his waking hours, and prevented him from dressing or feeding himself. When he tried to lift anything, his hand trembled violently. When he spoke, his head nodded and shook, and his features quivered. The grasping power of the hand was weakened, and indeed all the muscles were wasted and enfeebled. This singular muscular agitation, we were informed, came on at the same time with the mental failure, fifteen months prior to his admission here, and was preceded by a peculiar numb dead feeling in the right foot. The right side had always been more severely affected than the left. It was noted that the left pupil was considerably larger than the right, and that the patient laboured under abnormal thermal sensations. Even in cold winter weather, he would throw off all the bed-clothes except one sheet, and complain that his skin was burning, when it was shown by the thermometer to be only of normal temperature. Treated by a liberal dietary, by wine and by succus conii, this old man considerably improved. He became composed in mind, slept well, and the muscular trembling greatly abated. To the end, however, he was demented and afflicted by tremor.

The muscular tremor and weakness which we have been considering do not pass into paralysis in senile dementia. If an apoplectic stroke occur and hemiplegia follow, the case is no longer one of senile, but of organic dementia. A new set of symptoms has been introduced, the whole course of the case has been altered, and a different line of treatment is indicated. Towards the close of senile dementia, epileptiform seizures sometimes occur. Coma comes on; then occur muscular twitchings, and then perhaps severe clonic spasms; these, as well as the coma, being due to a rapid increase of serous effusion in the ventricles or in the meshes of the pia mater. Several attacks of this kind, followed by recovery, with general muscular weakness, but no distinct paralysis, may precede the final coma of senile dementia.

Sometimes patients in a state of senile dementia complain of pain in the head and dizziness. As a rule, however, they make no such complaints. A large majority of them present evidences of chronic atheromatous changes in the arteries. As we shall hereafter see, senile dementia may occur without any vascular degeneration. Still, it is correct to say that, in about three-fourths of the cases which come under observation, the simple and numerical atrophy—the necrobiosis—of the brain in which it essentially consists, is due to atheromatous changes in vessels and impeded blood-supply as much as to diminished functional activity. The vascular changes, the fibroid or calcareous thickening of the arteries, can usually be recognised externally either in the temporal or radial arteries, which, when thus degenerated, have a hard corded feel to the finger, and are much twisted and contorted. Occasionally, the disease of the arterial coats is so extensive, and is so combined with other conditions, that we have senile gangrene along with senile dementia. That was so in William S., aged 60, a gentleman's servant,

from Leeds, lately an inmate of Ward No. 4. He was stupid, and would not speak; his utterances were incoherent; he was restless at nights; his limbs trembled; and his arteries were hard and rigid. The day after his admission, a purple-black spot appeared on the left little toe. That spread, involved two other toes, and ran up the back of his foot, and he sank exhausted.

The pulse in senile dementia is generally slow. This may be owing to the increased resistance of the vessels, rendered inelastic by disease; or to atrophy and degeneration of the muscular substance of the heart; or to both these causes. The temperature is always slightly below the normal standard, and this, too, even when excitement is present. The appetite is capricious; sometimes the patient will eat voraciously, and at other times will altogether refuse food. But whether nourishment be taken freely or scantily, emaciation goes steadily on. The body loses its plumpness; the skin becomes wrinkled and flabby; and the muscles soft and flaccid. In some cases, wasting reaches an extreme degree. The nutrient activity of all the tissues seems to be defective, and so senile marasmus occurs. One woman labouring under senile dementia and marasmus now in this Asylum, Jane F., Ward 21, has, since her admission, fallen from 96 to 75 lbs. Considering that she is a woman of average height, that is a very light weight to attain to. She was terribly emaciated when received here, and now she is a mere skin-clad skeleton. This is an extreme case, but in all cases of senile dementia there is some loss of weight. As a contrast to Jane F., I may point out to you Hannah W., aged 72, who is subject to recurrent maniacal attacks, and who now weighs 246 lbs.

Senile dementia has been spoken of as "the last infirmity of noble minds".

"From Marlborough's eyes the tears of dotage flow,
And Swift expires a driveller and a show."

But experience will convince you that it is also the infirmity of minds which have no pretensions to nobility. For my part, I should be inclined to assert that the stupidest people are the most prone to it. The statistics of Franchini and Hawkins and Madden show that the lives of *literati* are unusually prolonged; and that, of course, means that senile decay was deferred in them beyond its usual period of incursion. No doubt, there are certain forms of brain-activity that tend to curtail existence; but, on the other hand, the cultivation of science and literature appears to be favourable to longevity. Some of the ablest and hardest working people that I have met have been those who have longest preserved their mental faculties intact; and some of the feeblest and idlest have been those who have dropped most prematurely and suddenly into senile dementia. The brain that is "quick to learn and wise to know" is that which will longest retain its vigour, unless it allow thoughtless follies to lay it low in the flower of its youth. Again, let me impress this truth upon you, that it is not pure brain-work, but brain-excitement or brain-distress, that eventuates in brain-degeneration and disease. Calm, rigorous, severe mental labour may be far pursued without risk or detriment; but, wherever an element of feverish anxiety, wearing responsibility, or vexing chagrin, is introduced, then come danger and damage. Entire abstinence from mental labour is much more likely to bring on senile dementia than any excess in it; and so is an abrupt cessation from any moderate and partial mental exercise which has been habitual. The tradesman who retires with a view to *otium cum dignitate* generally gets *tedium vite* instead. No more pitiable picture can, I think, be conceived, than the retired man of business wandering about in listless ineptitude and dreary opulence, without resources, reminiscences, aspirations, and with the great burden of fatuity settling down upon his mind. A lively bankruptcy must be delightful when compared with the state of that man. Struggling poverty would be a positive blessing to him. Sustained activity is essential to the maintenance of an habitually active organ in health; and atrophy—swift atrophy—must follow when it is deprived of its wonted exercise.

But any excessive activity or unusual excitement may accelerate the supervention of those changes which are incidental to advanced life, and aggravate their character, so that senile dementia is reached. Concussion from a fall or blow, an unexpected shock either of grief or joy, or excessive sexual or alcoholic indulgence, may prove an injurious stimulation to the tissues of an old man's brain, and hasten their decay. Those who have been accustomed to indulge too liberally in wine or beer, or who have suffered from exhausting disease, are, of course, more liable to pass into senile dementia than those who have lived more temperately, and have not been so weakened.

I am able to show you the brain of a man who suffered under senile dementia, and who died in this Asylum a few days ago. William A. was seventy-three years of age, and a saw-sharpener from Leeds. Two of his sisters had been insane, one having been an inmate of the Retreat at York; but he never showed any signs of mental aberration until the infirmity of age crept over him, when he became low-spirited and stupid,

wandering about from place to place without object, and talking in a rambling incoherent manner. After a brief sojourn in the workhouse, he was brought here, and manifested all the usual symptoms of senile decay. His strength failed rapidly, and he died after an attack of asthma and bronchitis. His brain is now submitted to your inspection. You see that the arachnoid covering it is thickened, and has a whitish cloudy aspect over the frontal and parietal lobes, where, also, a large amount of subarachnoid fluid buoys it up, and fills the interspaces between convolutions which are attenuated and wasted. Note that the cloudiness of the arachnoid and the wasting of the convolutions are limited to the frontal and parietal lobes. They terminate abruptly at the horizontal line of the Sylvian fissure below, and at the external postero-parietal fissure behind. No trace of them can be detected over the occipital or temporo-sphenoidal lobes, nor on the orbital lobule. The pia mater strips from the gyri with great facility; it can be removed from nearly the whole of a hemisphere in one piece, and yet some of the vessels ramifying in it look as if their coats were thickened. The larger of them, as seen with the unaided eye, running over the summits of the convolutions, have a dull opaque red colour, as if filled with red paint. When you look at them closely, you will, I think, have little doubt that their walls are thickened. If that be so, we have here thickening of the walls of vessels without any adhesion of the pia mater; and I must ask you carefully to note that fact, as I shall have occasion hereafter to show you thickening of the walls of vessels with strong adhesion of the pia mater to the subjacent cineritious substance. I shall then explain to you some important distinctions between changes in vascular walls originating in the vessels themselves and changes originating in surrounding tissues and secondarily propagated to the vessels. That the vessels here are really degenerated, will be evident to you if we turn over the brain and examine the large arteries at its base. These, you see, are studded with atheromatous patches of a dirty yellow colour, chiefly located at points of bifurcation, but scattered also along the coats of vessels where no branches are given off. The internal carotid and vertebral arteries, where cut across, present round gaping orifices, and all the large vessels retain a roundish or nodulated contour. But there are still other anomalies. The left posterior communicating artery has entirely disappeared. In its place, there is a tough fibrous band perforated by no canal; and at its points of union with the posterior cerebral and internal carotid arteries the atheromatous changes are singularly well marked. It seems that this vessel has been occluded by atheromatous metamorphosis, and has then undergone a fibroid degeneration. Let us next cut into this brain. You now see that the grey matter of the hemisphere is shallow and pale, and that the white matter has a rather dirty colour, and is of somewhat softer consistence than in a healthy brain. The ventricles are of large size, and are filled with clear serous fluid, and the ganglia which project into the ventricles are not quite so full and plump as they ought to be.

We have here a tolerably typical example of a brain from a senile dementia. It will be well, however, that I should read to you part of my notes of the *post mortem* examination of the brain of another man, who was also old and fatuous. Thomas K., aged 81, died in this Asylum about a year ago, after being an inmate of it for thirteen months. He exhibited during life all the well known symptoms of senile dementia, and after death the following appearances were observed. The skull was fairly symmetrical, but considerably thickened—most so in the frontal region, and presented deep grooves for the meningeal vessels. The dura mater was adherent to it in the frontal region and along the median line, where there were numerous Pacchionian bodies. So great was the adhesion of the dura mater, that shreds of it were left attached to the bone. The brain had a shrunken appearance, and did not adequately fill the cranial cavity. It weighed just forty-two ounces, and eight ounces of serous fluid escaped during its removal. There were thickening and miliness of the arachnoid over the frontal and parietal lobes. The pia mater stripped easily. All the convolutions were wasted but those of the frontal lobe, and the annectant gyri were most so. The sulci were very capacious, and formed, indeed, large hollows where they met each other. There was no vestige of atheroma in any of the vessels. These were, indeed, quite normal in appearance. The cortical matter of the convolutions was wanting in depth, and was abnormally pale; the medullary substance was white and watery. The cerebellum, pons Varolii, and medulla oblongata weighed five ounces and a quarter.

In this case we have all the cerebral atrophy and oedema, which are characteristic of senile changes in the brain, without atheroma of vessels. The atrophy and oedema must, therefore, have been dependent upon conditions of the nervous tissues themselves, and not upon defective vascular supply.

[To be continued.]