

On Certain Nervous Affections of Old Persons. By FRANCIS
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IN the present paper I do not intend to deal with those graver affections, such as apoplexy or paralysis, which frequently occur in the aged, and which depend on gross lesions of tissue. Nor shall I mention the severe and intractable neuralgias of advanced life. I desire to direct attention to a class of neuroses, which more or less inevitably attend the decline of life, and which, though they do not involve any serious catastrophe, are the cause of so much suffering that it is surprising that they should have received little or no systematic notice from medical writers. The neglect of these complaints is not merely a negative evil; for, owing to the fact that their neurotic nature is ignored, certain superficial symptoms which they present are treated as if they depended on functional disturbance of the liver, or ordinary stomach catarrh, &c., and very often with depressing remedies, which greatly aggravate the existing evil.

The nervous systems of aged persons go through a series of degenerative changes, the general character of which is fairly well known, while their details, on the contrary, cannot be accurately described, and probably vary greatly even within the limits of apparent "health"—*i. e.*, with immunity from the grosser lesions. In a general way, we know that an atrophy goes on in all nervous centres, the vessels becoming more or less atheromatous, and the true nervous matter being gradually supplanted by connective tissue, contraction of which causes a shrinking of the ganglionic masses. But the process does not always commence, or advance most rapidly, in such and such a portion of the nervous system; there is much reason to think that this is open to great variation. Certainly the clinical history of the group of neuroses which I am about to describe does at least very strongly suggest that they arise respectively from an unusual preponderance and rapidity of the wasting of particular nervous centres.

1. The first class of senile nervous affections of which I shall speak, includes the various degrees of sleeplessness and of restlessness—that is to say, without any corresponding mental affection. It is a singular thing that many prac-

tioners either acquiesce with much facility in the idea that these are necessary evils of old age, or else assume that they are dependent on something faulty in the digestion or the secretions; whereas it is perfectly easy to satisfy oneself by a little careful watching that they are completely independent of all such influences, and can be referred to nothing except to the state of the nervous centres, and very probably to changes of *circulation* in the latter. The sleeplessness of the aged commonly takes the form of inability to sleep for more than two, three, or four hours. The majority of the sufferers, so far as I have seen, get fairly well off to sleep, but are tormented by finding themselves broad awake again by three or four o'clock in the morning, even when they had only retired to rest at 11 o'clock, or later. This state of things may be absolutely the only noticeable thing amiss, except, of course, that there is weariness and a certain loss of strength from the inadequate amount of sleep obtained. But frequently there is not only inability to sleep for any long period, but there is active restlessness, a state of muscular fidgets, which has no necessary connection with any mental uneasiness. The patient gets uneasy as nightfall comes on; he will shift his position fifty times in the course of an evening, and when he goes to bed, although he may sleep, it will be a broken slumber, with frequent tossing from side to side. In short, the condition very closely resembles the early stage of chronic alcoholism, a stage when the patient has very likely not even recognised the fact that there is anything seriously amiss. Indeed, both the insomnia and the muscular restlessness of old age are curiously like the analogous conditions produced by chronic alcoholic poisoning, and we can hardly suppose that the resemblance is only on the surface. For, in truth, the pathological changes in the nervous system of the aged are so closely imitated by degeneration of alcoholic origin that we might fairly describe the latter as a premature old age artificially induced. And it is not merely in the nervous system, but in all the tissues, that the similarity of the changes is observed. The grey hair, watery eye, and flabby muscles, are no less significant than the muscular tremor and fidgettiness, and the incapacity for long continued sleep, of the untimely wearing out of the organism which continuous intemperance induces.

It would be premature, in the present state of our knowledge, to state any absolute theory of the nervous lesions which induce the insomnia and restlessness of old age. But

it appears highly probable that both in senile decay and in alcoholic degeneration, the brain alone may be affected, and sleeplessness may be the only result, or the motor tract may be extensively affected with just so much of change as to produce—not tremor exactly—but restlessness. And both in chronic alcoholism, and in mere senility, cases are sometimes, though rarely, observed, in which there is muscular restlessness, and even slight tremor during waking hours, but no particular insomnia at night; in which case we may suppose the motor tract to be affected to the exclusion of the centres of consciousness.

2. Frequently allied with, but occasionally independent of, insomnia and muscular restlessness, is a peculiar state of mental irritability in the aged. I am not now speaking of patients in whom there is mental alienation amounting to senile dementia. Far short of this, there is a phase of mental change in the aged which is sometimes inexpressibly trying to the patient himself, and still more to all those who are brought into contact with him. It may be said to consist in a peculiar perversity, a tendency to offer vexatious and frivolous delay and opposition to everything which is suggested by others, however important the occasion. This is the typical character of the mental state; but in truth it shades off by imperceptible degrees into the form of senile dementia, with occasional or permanent delusions. The patients are nearly always individuals who, in their own person or that of other members of the stock from which they spring, can produce evidence of a markedly neurotic constitution; often such persons belong to families in which there has been a considerable amount of declared insanity. They are just that sort of folk who insist on making perverse and unreasonable alterations in their wills when these had been settled long before in a just and convenient manner, or who quarrel in their last days upon some frivolous pretext with the friend of a lifetime.

3. Closely allied with the peculiar mental state just described, though by no means always accompanying it, is a very peculiar modification of the vitality of the skin. In the first place, the patients to whom I now refer exhibit a very marked increase of susceptibility to certain peripheral impressions; for instance, the mildest stimulant application will, in such subjects, produce a most astonishing and unexpected irritation. Two instances were mentioned in an early number of the "Practitioner," one by Dr. Armitage and another

by myself, in which the application of a liniment intended to relieve a neuralgia, and to which the skin of an ordinarily healthy person would have been quite indifferent, produced an amount of irritation and positive pain which became serious and even alarming. But, in fact, I have seen similar occurrences over and over again; and besides this, there is a spontaneous tendency in the skins of old persons, of similar constitutions, to develop phenomena of irritation. I need hardly mention to any reader the frequency and intractability of so-called *prurigo* among the aged. It is true that attempts have been made, in recent years, to show that *prurigo* can nearly always be traced, with proper care, to the presence of animal parasites; but that view of the case is assuredly an exaggeration. I am not prepared to say that the altered vital status of the skin of some of these elderly patients does not render it a more fertile soil for the nourishment of animal parasites; and doubtless the latter, when present, would increase the irritation. But it has happened to me, as no doubt it has to many others, to observe the most intense *prurigo* in individuals who not only were exquisitely cleanly in their habits, but in whom the closest inspection and microscopic investigation has failed to detect the least trace of the presence of parasites.

One such case of an old lady of 70 can never be forgotten by me; not only because of the utter intractability of the disease under any such remedies as were then at my command, but because of the remarkable clinical history. For a long time before the skin irritation shewed itself in the least, there had been a condition of mental perversity, strictly answering to the type which I have described above, and threatening the peace and comfort of every one who was connected with the patient. At last there appeared a universal pruriginous irritability of the skin, slight at first, but soon increasing to a degree which made life a constant torture; no external cause whatever could be assigned, and none of the numerous remedies, both local and constitutional, which were tried, effected the smallest good. Yet I do not hesitate to say that by the intelligent use of such remedies on such a principle, as will be presently described, cases even of this gravity may be robbed of all their severity. A most interesting phenomenon in the case of the old lady just mentioned was, that the greater the amount of pruriginous irritation present, the more completely always was the power of *discriminative* skin-sensation abolished.

4. A fourth group of neurotic maladies which prey upon large numbers of the aged, and make their life miserable, includes various spasmodic, or half-spasmodic and half-paralytic affections of the stomach, or intestines, or both. If one wished to see an extreme instance of this kind of affection, one need only watch some aged pauper who has been recently admitted to a workhouse, and has incautiously eaten a pannikin of workhouse pea-soup; but this is hardly a fair example, the irritating substance being of such uncommon virulence. The cramping abdominal pain and the bellowing flatulence, however, are only a slight exaggeration of what happens to hundreds of aged persons whenever they take food, or at any rate whenever they take anything which inflicts the slightest extra peristaltic labour on the stomach or bowels. So far as one can judge, the local condition seems nearly always to be a compound of spasm and paralysis; individual groups of muscular fibres being strongly contracted, while others are so completely paralysed as to allow any amount of distension by gas. Sometimes there seems to be complete palsy of the muscular fibres of the stomach, or of the colon, which can be mapped out by the exaggerated tympanitis of their percussion sound, while the abdominal muscles, on the other hand, are in a decidedly spasmodic condition, as if from some reflex effect. And it is really miserable to reflect on the fact that such patients, by scores, are treated as if their malady were of the nature of a catarrhal dyspepsia, and on that supposition are drenched with medicines which simply aggravate the mischief indefinitely. Indeed, it is the consideration of this kind of senile maladies which has chiefly induced me to bring forward the subject of the minor neuroses of old age; since the diagnosis is both important and also extremely interesting. Such patients will hardly ever be found to suffer only from the abdominal affection: nearly always it will be discovered that they have also the true senile insomnia, or muscular restlessness, and sometimes positive tremor.

A most interesting point of comparison lies between the flatulence and abdominal spasm of senility, and the somewhat similar condition which is found in so many hypochondriacs of all ages, and which occasioned their malady to be anciently called the "vapours." Nothing can be more astonishing to the novice in "nervous" practice than his first interview with a flatulent hypochondriac, especially if he happens to witness one of the attacks from its commence-

ment: the sudden conversion of the patient's whole interior into a mere cave of Eolus, is perfectly startling; yet the same thing, in only slightly less intensity, may be studied to any extent among the aged; but in the latter case it is taken as a matter of course, although the suffering and discomfort are often greater, and this without the alleviation which your genuine hypochondriac always derives from the noisy evidences of his misery. The same remarks apply to the similarity between senile cramp and flatulence, and the symptoms displayed by many hysterical women; but the parallel with hypochondriasis is much more instructive, because there can be no pretence in an immense number of cases of the latter disease for supposing that the phenomena result from peripheral irritation, a supposition which is always possible in the case of hysteria.

The above is by no means a complete list of the minor, yet very inconvenient, neurotic affections to which the aged are liable; but they are the most frequent of them; and they form together a group which is well deserving of study, both in a biological, and what is of more consequence to my present purpose, in a therapeutical point of view. Before entering on the latter subject, however, I cannot resist the temptation of dwelling for a moment on the interesting topic of the natural history of nervous decay.

The more carefully we reflect on the conditions of the *duration of life*, the more we shall be inclined to regard the nervous system as that portion of the organism of the higher animals which is at once the most exquisitely perfected, and the most fragile. The nervous system, such as we see it in man, is the highest expression of the tendency towards individuation (or the union of a multitude of organs into a consistent and harmoniously working organism) by a special medium of intercommunication. As such, its structure is necessarily complex, and its requirements for perfect vitality and efficiency are high. As a matter of fact, we know that it attains its maturity slowly—at least the more elaborate and special portion of it do so—and that the right performance of its functions requires the constant maintenance of a more perfect and elaborate apparatus of blood supply for its nutrition and stimulation than is required by any other portion of the organism. That is to say, it leans in a *special* manner for the support of its vitality upon the circulation. But the apparatus of circulation—especially the peripheral arteries and arterioles—is precisely that portion of the

organism which enters first upon the degenerative changes which thenceforward go on in steady progression to death; it could hardly, therefore, be doubtful, that the central nervous system would exhibit the first effects of diminished vital power. And if we analyse the circumstances of what we may call "natural" deaths at an advanced age, we shall come, without much difficulty, to the conclusion that a large majority of these are caused by some break-down of the nervous centres. Exclude the intercurrent of acute inflammatory diseases and fevers, physical accidents, and the special inheritance or the fortuitous acquirement of constitutional diseases (like consumption, cancer, or syphilis), and we are shut up to the necessity that the death of those who have lived to an old age must be caused by some break-down of the nervous centres. It is only a step from this principle to the other, and not less important one, that the last portion of life is likely to be signalised by local and partial failures of the nervous centres, which might easily be very capricious in the order of their succession, since it is known that the pathological changes of the blood-vessels, which distinguish the period of commencing bodily decay, are particularly irregular in the order of their local development. And there is much evidence to convince us, that the commencement of definite organic lesions of the brain and spinal cord is preceded, and that its earlier stages are accompanied by, serious local disorders of the circulation, which produce temporary disturbance of function that are sometimes alarmingly severe. I need not remind anyone who has had much practice in nervous disorders of the attacks of vertigo which so often precede, by a considerable period, the occurrence of actual hemiplegia in genuine senile ramollissement; but I may call attention to the fact that, powerless though we are to prevent the final catastrophe, we can greatly relieve the vertiginous sensations which foreshadow it; and we can do this best by the use of remedies which it can hardly be doubted act by regulating the cerebral circulation. And this brings me to the practical part of my paper—the question of treatment—in which I shall endeavour to show that the neurotic affections of old age, though so various in their seat and manifestations as to include insomnia and mental modifications at one end of the scale, and stomach cramps at the other, are all to be treated upon the same principle, viz., that of modifying the circulation of the particular nervous centre which may be supposed at fault in the individual case.

And in the first place, with regard to the insomnia, which is not only very common in old age, but (especially when combined with muscular restlessness), is very distressing and, not unfrequently, leads to a most undesirable modification of the patient's temper, and even of his character. Upon this subject I have been for some time engaged in careful observations, and it was with much gratification that I received from Sir Frederick Pollock the account of his own very interesting experience with ether, because it gives a general confirmation to the (to me rather unexpected) results of my experiments. The chief matter for surprise in these results had been the fact, that the bromide of potassium, which had given such excellent results as a hypnotic and general tranquilliser of the nervous system, both in my own hands and those of others, unexpectedly failed to give anything like the same amount of relief in the insomnia and nervous inquietude of the aged. This led to a large number of comparative trials of drugs, both in cases of senile decay, pure and simple, and the insomnia of advanced stages of chronic alcoholism which had gone on slowly for a long time. The fact then came out clearly, as it seemed to me, that for the relief of either of these conditions, either sulphuric ether or pyroxylic spirit are greatly superior to the bromide. The remedies were given internally, however: and I had not adopted Sir F. Pollock's plan of *inhalation* from an ordinary bottle through one nostril, which there is much reason to believe is the best way of taking ether for hypnotic and generally calmative purposes. My own impression is rather strongly in favour of the idea that the failure of the bromide to produce sleep in senile insomnia is owing to its too great *anæmiating* effect; for although the brain needs to be anæmic to a certain degree, in order that sleep may take place, it is equally the fact that *excessive* anæmia entirely prevents sleep. On the other hand, I must suppose that small doses of ether and similar agents produce sleep by a gentle stimulation which removes spasm of vessels and *territorial irregularities* of circulation in the brain; and it is an interesting thing to enquire whether this be a direct effect on the vaso-motor fibres in the brain itself, or a reflex effect starting from the action of the ether upon the terminal branches of the *vagus* in the lungs. In favour of the latter idea is the fact that the *vagus* is the great inhibitor of vaso-motor action; and it would be further supported if the plan of minute *inhalations* were ultimately proved to be more efficacious than the use of small stomach doses. But even when taken by the stomach, ether

must very quickly present itself to the terminals of the vagus in the lungs, as it circulates in the pulmonic blood.

It is doubtful, however, whether the new remedy, chloral, may not supersede ether for the purpose of inducing natural sleep and general nervous tranquillity in aged persons. I am still engaged in a research on the actions of this drug, which I hope shortly to publish elsewhere; but I may state a few facts already made out. In the first place, hydrate of chloral, given in anything like moderate doses, appears to be the most purely tranquillising agent in the whole range of the pharmacopœia; it is not till highly poisonous doses are reached that any symptom of *physiological disturbance* is produced. In this respect it markedly differs from the action of every other hypnotic with which I am acquainted. Secondly, a number of sphygmographic observations which I have had made upon myself seem to prove that it excites a steady toning influence upon the arterial web, which must be altogether opposed to the existence of local spasms and territorial irregularities of circulation in the brain. In short, it appears as if it must produce just the necessary amount of control over the cerebral arterial circulation, to keep it at a uniformly rather low level, without any excessive anæmia.

The effect of remedies which really reach and subdue the sleeplessness and muscular inquietude of aged persons extends much further than the mere removal of these symptoms. In cases where *opium* has agreed well (which is not always the case), I have seen a revolution take place in the whole character and mental habits of the patients, which must have been seen to be believed: and I have considerable confidence that extended experience will show that both ether (in minute inhalation) and hydrate of chloral are capable of producing similar effects, while they will probably be much more widely applicable than opium. I have already entered a protest elsewhere against the senseless bigotry, as it appears to me, of withholding the systematic use of calmatives from the aged, under the influence of unreasoning dislike of what they call—"a habit of indulgence." In repeating this protest in my present paper, I appeal with much confidence to those numerous readers of this journal who are constantly engaged in the study of mental faults and diseases, to say whether the following statement is not correct:—I maintain that while it is for the most part extremely hazardous, and often fatally mischievous, to prescribe the systematic use of narcotic stimulant calmatives to young and middle-aged persons for the mere

relief of pain and nervous worry, it is perfectly different in the case of the aged. The latter have passed through that excitable and stormy period of nervous life which corresponds to the activity of the sexual functions, and in which temptations to surrender duty and activity for the sake of mere luxury, are at all times powerful, and too often overwhelming. To them, in their isolation from the great passions of life, the real temptation is towards a busy, peddling, fussy, activity, for the mere sake of self-assertion, as they feel life dropping away from them. It is of incalculable advantage to their chances of a long and peaceful old age that their nervous systems should be kept in a state of tranquillity, and the secret of this, we can hardly doubt, is to prevent local inequalities of circulation in the brain and spinal cord.

We must next discuss the treatment of the very common and troublesome spasms of the stomach to which the aged are liable. Up to the last minute almost we have been prosecuting fresh inquiries, with a new remedy. These stomach cramps in the aged are, unfortunately, often treated as dyspepsias depending on derangement of the digestive secretions, and a variety of more or less depressing remedies, such as alkalies, hydrocyanic acid, and a great many more, besides cartloads of innocuous, but useless, bismuth, are poured down the throats of unfortunate old ladies and gentlemen who could have been relieved of all their miseries in a few moments. Sir F. Pollock has recently described in the "Practitioner" how effectually the inhalation of a few whiffs of ether relieved this kind of affection in himself, besides inducing general tranquillity and rendering sleep possible. There can be no doubt that the observation is a correct one; and I have since verified it on more than one occasion.

The last thing which I have to notice is the treatment of the curious irritable conditions of the *skin* which are often found in the aged. So far as I know, the treatment of this sort of affection is very often an elaborate farce. Having satisfied himself that the disease is not *parasitic* (no light task!) the practitioner usually commences a series of tentative measures, which fluctuate between the theory which he has just definitely abandoned, and the opposite hypothesis that it is altogether "constitutional." In this way the whole subject is so thrown into doubt, that no satisfactory results can be obtained. But if we can once accustom our minds to the idea that the phenomena may be due to the mere progress of degenerative changes in the central sensory

tract of the nervous system, I believe that we shall discover a starting-point for rational treatment. The hydrate of chloral has yielded excellent results in my own experience in two cases of great irritability of the skin in aged persons.

The mere administration of a single half-drachm dose at bedtime for several successive nights, with the effect of procuring calm and tranquil sleep, produced a very noticeable diminution of the skin irritation. I then resumed the use of arsenic (Fowler's solution, five minims three times a day), which, singly, had before proved ineffectual, and the irritation completely subsided in about five and seven weeks respectively.

Cases of Mental Imbecility, associated with "Duchenne's Paralysis," or Pseudo-Hypertrophic Muscular Paralysis.
BY W. B. KESTEVEN, F.R.C.S.

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THE cases that I propose to relate belong to a group either entirely overlooked or rarely met with until lately, and, doubtless, confounded with other forms of infantile paralysis. Having through the kindness of Mr. William Adams had the opportunity of seeing an example of the affection in the Royal Orthopædic Hospital, I was enabled to recognise the nature of the two first of these cases when called to see them in October last. I may observe that in a practice of upwards of thirty years, including during several years the charge of a large parochial infirmary for children, I had never recognised the disease. The association of mental imbecility with muscular paralysis, which is peculiar in these cases, has induced me to bring them under the notice of the members of this Association. In order to complete their history and to endeavour to render them the more worthy of your attention, I have embodied in my remarks the principal points that I have been able to gather from the study of M. Duchenne's pamphlet.*

* "*De la paralysie musculaire pseudo-hypertrophique ou paralysie myo-sclerotique*," par le Dr. Duchenne (de Boulogne), Paris, 1868, in which the author has collected together all the published cases he could find. In the transactions of the Pathological Society, Vol. xix., Mr. Adams has related his case; and in the same vol. Dr. Lockhart Clarke has given the results of his observation of one of Dr. Duchenne's cases.