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Laycock, Thomas, 1812-1876.
University of Glasgow. Library

Publication/Creation

Dublin : [John Falconer, Printer to HMSO], 1869.

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AN INQUIRY

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INTO THE INFLUENCE OF

LIBIDINOUS EXCESS

ON THE CAUSATION OF

LOCOMOTOR ATAXY OR TABES DORSALIS.

BY

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Reprinted from the Dublin Quarterly Journal of Medical Science, May, 1869.

DUBLIN :

JOHN FALCONER, 53, UPPER SACKVILLE-STREET,

PRINTER TO HER MAJESTY'S STATIONERY OFFICE.

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AN INQUIRY
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It is not improbable that too much importance is sometimes given to sexual excesses as a cause of the neuroses classed under the term tabes dorsalis, to the exclusion of equally important and perhaps more direct causes; but I think there are signs of a tendency to the other extreme of opinion, more especially with regard to locomotor ataxy, and a danger of thus overlooking a very important practical point. Much depends upon the notion people have of what constitutes excess, which must be always relative, and whether it be looked upon as an exciting, or immediate, or a predisposing and remote cause. It is not uncommon to find diseases of the nervous system insidiously developed from some remote cause, as an injury to a nerve, and so with that under consideration. A great excess for a few days only, acting like a "shock," may manifest its consequences in the nervous system at a long distant subsequent period. It is of importance to distinguish locomotor ataxy induced in this way from the spermatorrhea, nervousness, and nervous debility that result from solitary vice, since the sensory pudic nerves are differently excited. To this difference, indeed, may be attributed, in some instances at least, the differences in the results. In locomotor ataxy the degeneration seems to commence with the sensory ganglia and posterior roots of the spinal

nerves, extending thence upwards; whereas in "nervous debility" the chief symptoms are manifested cerebrally. The following case is an illustration of the latter class:—

CASE I.—*Tabes Dorsalis of the Old Writers.* Reported by Mr. J. H. CROOM. J. M.D., aged twenty-five, a pipe-maker, admitted to Ward 3, Edinburgh Royal Infirmary, November 15, 1867, under care of Dr. Laycock.

History.—When about twelve years old he became addicted to masturbation, and continued the practice for eleven years—*i.e.*, until about two years ago, when he gave it up. Since then he has been subject to nocturnal emissions at the rate of three, four, or five times a week; often, however, with intervals without any of a fortnight's duration. At first he practised masturbation (he says) from ten to twelve times daily, and continued to do so for two years, when he was seized with what he calls a weak fit, in which he was affected with temporary blindness, and was confined to bed for a day or two. He then reduced the number of times to twice daily, *viz.*, night and morning. Except a severe attack of an acute disease in childhood, he has always been well and strong. Has been of intemperate habits, getting drunk as a rule every Saturday night, but has only been continuously "on the beer" twice for about a week each time. Has usually smoked from three to four ounces of tobacco per week. Has always had plenty of animal and other food. Has followed his employment of a pipe-maker until two months ago, when he found himself unable to work. On admission the intelligence of the patient was observed to be greatly impaired. His memory was defective and he could not carry on a sustained conversation for any length of time. He sleeps very little; has vertigo and headache, and he says he "feels as if there was a constant cloud over him." Complains of persistent dull pain in left hypochondrium, in the region of the heart, and in the forehead; and of constant pain and weakness in the loins. Is very nervous and easily frightened, and has fits of despondency. All his senses normal except vision, which is impaired. Expression of countenance anxious and vacant, that of the eyes peculiar; the eyebrows meet, the pupils widely dilated. On ophthalmoscopic examination, by Mr. Walker, ophthalmic surgeon to the Infirmary, both of the nerves were found to be in a state of atrophy. The disk of the right ovoid in form, and downwards and outwards in direction, that of the left normal. Patient is of middle height, thin, and very pallid, but not

anemic. His manner is hesitating, and his gait unsteady, but he has no neuralgic pains in legs. He lies chiefly on his back.

Skin natural, lungs healthy, apex-beat of heart between sixth and seventh rib; first sound slightly accentuated; appetite good; bowels constipated. He was treated at first with the bromide of potassium. This soothed him at night for a few minutes after taking it, but no longer. The cold douche depressed him much. A combination of nux vomica and valerianate of iron seemed to be useful. But after treatment for forty days the patient became very restless and "uncomfortable" in his mind—thought he should like to make the tour of Scotland and sell pipes—and left the Hospital slightly relieved.

This case offers a group of neuroses (or functional nervous disorders) for consideration which is by no means uncommon, although the nerve-centres involved may be variously affected in different individuals. It has been attributed from time immemorial to venereal intemperance, whether associated with paraplegic phenomena or not; and is distinctly described in the Hippocratic writings under the term *phthisis notias*, *i.e.*, humid tabes or phthisis. The symptoms there given closely correspond with those usually attributed now-a-days to spermatorrhea. Indeed, Dr. M. Good states that the differential term "humid" was adopted expressly to indicate that kind of decline (*phthisis*) which results from an intemperate indulgence in libidinous pleasures, because the patient had a frequent and involuntary secretion of a dilute and imperfect seminal fluid. Lommius, taking up the Hippocratic description, termed it dorsal phthisis or decline (*tabes dorsalis*), from the weakness in the back which the intemperate indulgence in question caused. It is to be noted, however, that all the older writers mentioned spermatorrhea rather as a result of salacity, as it certainly is in cases of locomotor ataxy in the early stage, than a cause of the neuroses, and do not refer to masturbation at all. Nor is it probable that this vice was more commonly practised than the unnatural crimes so prevalent in ancient times. Perhaps it is to these latter the Greek writers refer when they remark that the decline occurs in persons of "a salacious disposition," since they specially add—"or in those who are newly married, and have too largely indulged in conjugal pleasure."

In the case just detailed, except an unsteadiness in the legs, no affection of the lower extremities was noted. But in the kind termed progressive locomotor ataxy, in addition to vertigo, dimness of vision, strabismus, and the various symptoms attributed to

spermatorrhea, there are illusive sensations and neuralgic pains in the back and legs, often extending to the arms, impotence, and a peculiar instability in walking. For a long period, and even yet, these and other affections of the lower extremities were attributed without distinction to spermatorrhea or sexual intemperance, and were also designated *tabes dorsalis*. Professor Romberg was the first (nearly thirty years ago) to differentiate the peculiarly unstable gait and its concomitants from ordinary paraplegia. Although he clearly described the head-symptoms, and most particularly the defects in vision and other sensory affections which accompany the ataxy, yet, finding the anatomical changes restricted to the spinal cord and to the posterior roots and columns in the dorsal region, he considered it to be a spinal disorder,—not, however, involving the cord as an instrument for the transmission of motor and sensory stimuli, but as a central organ and source of nervous power by which “the continuance and vigour of motion and sensation are secured, and a general stimulus for the entire organism is provided.” To this diminution of power Romberg attributed the group of symptoms which he described under the old term *tabes dorsalis*, and the diminution of power to certain anatomical changes in the cord. M. Duchenne communicated a series of papers to the *Archives Gen. de Med.*, commencing with December, 1858, in which he described the affection described by Romberg as a new disease, evidently, and indeed confessedly in ignorance of Romberg’s researches. But as Dr. Axenfeld pithily says in a letter in the *Archives* for Nov., 1863, p. 475, *deux noms, une chose*. Dr. A.’s account of the disease, in the same journal, for August and October, I may here say, is one of the best extant. The chief difference between the two inquirers is in the anatomy. Duchenne dwells more than Romberg upon the encephalic symptoms, and fixes upon the cerebellum as the seat of the disease. My impression is that both are right except in so far as they deny or omit.

In what respects then does the old *tabes dorsalis* differ from the ataxic *tabes*? Anatomically in the progressive character of the disease; in the former there is no progressive degeneration of the nerve tissues. In both there are head-symptoms, but it is in the onset of a progressive spinal degeneration with obscure head-symptoms that ataxy chiefly differs from the old *tabes*. And this is of the greatest practical importance, for the progress of the affection when once the spinal symptoms are established is so inevitable, however slow, that the diagnosis in the early stage is essential to successful treatment.

Now this can hardly be established from the symptoms alone, and independently of a knowledge of the predisposing and exciting causes. Hence the value of the latter, and more especially in reference to sexual excesses. How shall we ascertain this fact? There can be little doubt that in the case just detailed early and inveterate masturbation, so plainly confessed, was a chief cause of the neuroses. Individuals differ so much, however, that some experience of the protean forms of the disorder, and of the evasions of patients, is needed to diagnose the affection when chiefly due to sexual excesses. Besides, etiologically, this is a relative term, for with this intemperance, as with intoxication, patients have not only peculiar ideas as to what is excess, but differ as to the extent they are affected by the same extent of indulgence. So that even when patients are candid, much caution is required in receiving their statements; but too often excess is concealed, and this especially when it is not only vicious but criminal. Again, difficulties in the way of etiological diagnosis are particularly experienced in those persons in whom mental disorders, like hypochondriasis and "low spirits," mask the other neuroses and turn attention from them. I think, however, the chief difficulty is in the important fact that venereal intemperance is so rarely followed at once by the symptoms, that the connexion between cause and effect is lost sight of; the effect being rather to predispose the nerve-centres to take on disease from the action of various and more immediately exciting causes, so that these are regarded as the causes and the other is forgotten or denied. The subjoined case illustrates this order of causation in progressive locomotor ataxy:—

CASE II.—*Case of Progressive Locomotor Ataxy, first stage.* Reported by Mr. W. A. P. JEFFERISS, Clin. Clerk. Alex. D., shoemaker, aged thirty, unmarried, admitted into Ward 1 of the Royal Edinburgh Infirmary, under care of Dr. Laycock, 26th January, 1868.

History.—Patient has had the diseases of childhood; he has been a very healthy man, never having been a day off work from illness of any kind. Prior to two years ago he was in the habit of taking spirits very freely, but since that date has been of very temperate habits. About four years ago he contracted a gonorrhea, and had also what he termed syphilis, in the form of several hard indurated chancres on the glans penis. They were very long in healing, resisting all treatment for nearly ten months. The large scar left

on the glans penis is of irregular form, and there is no induration. He had no sore throat, buboes, pains in the bones, or eruption on his body with the chancres, but he had *chordee for several weeks with the gonorrhea, and frequent seminal discharges*. The glans penis is singularly large and broad, as is the whole organ. He admits, but with some reluctance, that he has practised masturbation, and that he has indulged in libidinous excesses; not ascertained whether he be impotent. Last spring, whilst working in a cold, damp, and ill-ventilated workshop, he was troubled with wandering pains in his back. These continued for a few months, and then wholly ceased for about three months, when they began again with greater severity. They were limited to the lumbar and iliac regions, more particularly on the right side. After repeated local applications, chiefly of amoniated camphor liniment, they greatly diminished in severity, but still continued to annoy him; when in addition he began to suffer from a loss of power over his legs, so that he could not stand unsupported, and was consequently obliged to give up work. He says he could move his legs and feet with as much force as ever, provided he was sitting or lying, but on attempting to walk he had no control over his movements. About two months ago he had medical advice, but getting no better after treatment and confinement to bed for seven weeks, he came to the Infirmary.

On Admission.—He is a stout, muscular-looking man, with a heavy jaw, and anxious but intelligent expression. With the exception of weak vision, there was no defect in the special senses. Tactile sensibility was somewhat impaired in the lower extremities, and he complained of slight pain in the *right* iliac and lumbar regions. No headache; sleep good; memory and power of attention are both impaired. On attempting to walk he loses control of his legs and stumbles, especially if his eyes be shut. He says that he feels when walking as if a soft body was between the soles of his feet and the ground. When lying in bed he can exercise perfect volitional control over his legs, which are well nourished and muscular. His eyes were examined with the ophthalmoscope by Mr. Walker, who noted optic neuritis in both eyes; more distinctly marked in the *left*, and the whole retina more injected than usual. The *right* is much the same as the left, but probably more advanced in the second stage of atrophy. Respiratory and cardiac organs healthy; tongue clean; appetite good; bowels constipated; urine normal. At first the *secale cornutum* was prescribed with no result. Although it was doubtful whether the man had had syphilis or not, the

bichloride of mercury was subsequently conjoined, and the occipital region shaved and blistered. Under this treatment he rapidly improved for a while, so that he became able to stand and walk alone. On 17th March, being satisfied with his improved health, he left the Infirmary.

In this case there were such conditions operative on the sensory nerves of the glans penis which, by centripetal action, would induce morbid changes in the ganglia on the posterior roots, and in the posterior sensory columns. Such was the long strain on the *nervi erigentes* that induced the chordee; such also the long continued irritation of the large sensitive glans by the broad ulcer on it, and doubtless, the venereal gluttony might be rightly added. But all these are apt to be forgotten in the obvious and immediate exciting cause, viz., constant exposure of the legs to cold and damp. This exciting cause is so common that it is often noticed. Mr. Lockhart Clarke, in his able monograph on the disease in Vol. i. of *St. George's Hospital Reports*, observes "that in persons who are predisposed, almost anything that depresses the nervous power, especially of the spinal cord, may prove an exciting cause. . . . Of all these a prolonged exposure to the combined operation of cold and damp is by far the most common, as it is probably the most certain in its effects." This fact being admitted it still remains to determine the special predisposing cause or causes, for precisely the same general exciting causes induce true paraplegia and other forms of spinal disease, and the question is left unsolved—what is that special condition of the nerve-centres (both cerebral and spinal) which so specially predisposes as to render cold available to the production of this special form of disease of the cord and brain?

The same remark applies to the alleged influence of age, sex, and heredity, which latter Trousseau dwells upon. All observers concur in stating that the disease specially affects males aged from twenty to fifty. Now this is the period of life during which the virile organs are most active; nor do the three cases mentioned by Friedreich, aged fifteen, sixteen, and eighteen respectively, invalidate the general fact. Yet none attempt to show why males of this age are so highly predisposed, nor why females are comparatively exempt. The facts would lead to the conclusion that the disease is in some relation to male sexual function; yet the majority of observers repudiate the notion. Mr. L. Clarke, it is true, speaks of onanism as an exciting cause; and Trousseau says, without going further, "In nearly half the cases which have come under my

observation there had been spermatorrhea. The seminal losses were either diurnal or nocturnal. . . . In Lallemand's work on spermatorrhea you will find several cases of paraplegia, which were certainly cases of locomotor ataxy." Dr. C. Bland Radcliffe also observes—"In some cases sexual excess would seem to figure as a cause, but not in others; not perhaps by any means in the majority."—(*Reynolds's System of Medicine*, Vol. ii., p. 350.) Yet, of the two cases Dr. R. relates (both in sailors), he remarks of the one—"Sexually, the state may be spoken of as approaching to spermatorrhea,"—and of the other—"For the last two years the sexual inclinations have been much damped, but before this time, from what he says, he appears to have been little better than a very satyr." Doubtless it is from conclusions thus drawn that Mr. Roberts affirms, in common with others, "that venereal excesses—the acknowledged productive cause of tabes dorsalis—seem to have no special relation to the etiology of locomotor ataxia;" and that Dr. C. B. Radcliffe, in common with Trousseau and others, concludes: "In fact, it is not possible to refer locomotor ataxy to any special cause," and particularly objects to the term tabes dorsalis being used to designate it, because implying its sexual origin. Now I think justice has not been done in this respect, as in others, to Romberg. He observes—"Two circumstances that have been shown with certainty to predispose to tabes dorsalis are the male sex, and the period between the thirtieth and fiftieth year of life. Scarcely one-eighth of the cases are females. The loss of semen has always been looked upon as one of the most fruitful sources of the complaint; but this in itself does not appear to be a matter of much consequence as influencing the disease, as patients who have been labouring under spermatorrhea for a series of years are much more liable to hypochondriasis and cerebral affections than to tabes dorsalis. *But when combined with hyperstimulation of the nerves, to which sensual abuses give rise, it not unfrequently favours the origin and encourages the development of the disease after it has commenced.* When the strength is much taxed by continued standing in a bent posture, by forced marches, and the catarrhal influences of wet bivouacs, followed by drunkenness and debauchery, as is so often the case in campaigns, the malady is rife; this is the reason why tabes dorsalis was so frequent during the first decade following the great wars of the present century."—(*Dr. Sieveking's Trans. for the Sydenham Society*, Vol. ii., p. 400.) In none of the monographs that I have read is there so accurate an account of the order of

causation as this. The fact I have italicized is particularly worthy of notice. And this points to the conclusion, that to determine the exact relation of tabes dorsalis to sexual excesses, much more careful observation is needed as to the particular kind of excess, as to the date thereof, and as to the nerve-centres and nerves involved. In the true sexual affection the first stage of the disease is sometimes so exclusively neuralgic that only very close observation can discover ataxy. Now it is in this stage that close inquiry reveals the effects of *hyperstimulation* of the erotic nerves (if I may be allowed so to designate those which subserve to sexual pleasure), such as results from very frequently repeated, perhaps, bridal congress, and not merely from masturbation. I have a case now under observation in which the neuralgia is the prominent condition and the ataxia is only discoverable on careful observation and inquiry.

What is the relation of the alleged cause to that most important point in the disease, viz.: the insidious yet progressive degeneration of the nerves and nerve-centres involved? Now there are cases of locomotor ataxy in which there is not only no progressive degeneration, but few, if any, sensory neuroses. In these, the ataxy is presented in its simplest form and as a neurosis only, and amounts mainly to a defective co-ordination of those muscles of the back whereby the legs, vertebral column, and pelvis are rendered combinedly fit for locomotion, so that when these muscles are not needed, as in lying or sitting, the patient has complete volitional control over his legs. Experience teaches that any long exercise of a particular group of muscles, such as are strained when working in a stooping posture, would so far act on the corresponding sensorial or motorial centres, that a predisponent condition might be set up such as to render cold and damp efficacious in exciting local disorder, without necessarily inducing progressive neuralgia or cerebro-mental neuroses, provided no venereal excesses have been committed. It is precisely to this class of cases that Dr. Roberts, of Manchester, refers when he remarks (in *Med. Mirror*, for 1866), "Unsteadiness of gait, from a want of power to co-ordinate the muscular contractions of the lower limbs, is a frequent complaint in this district; but I have not observed that such cases tend to a progressive involvement of the entire muscular system, and a gradual abolition or perversion of cutaneous sensibility, nor have they been preceded or accompanied by strabismus or defective vision. The condition to which I refer occurs in persons whose occupation exposes them to excessive wet or cold—miners, well-sinkers, excavators, and more

rarely those who work on a cold stone floor" (*On the more unusual Forms of Paralysis*, p. 375)—those in fact being chiefly affected who work stooping. Here then is an example of causes predisposing to and exciting simple locomotor ataxy, by acting locally on the nerve-centres.

By thus separating the primary and most essential symptoms from the others, we get a better insight into the order of development of the disease. We find that progressive increase is associated with—not the mere motor disorder—but the sensory symptoms, and that the causes of the two classes of symptoms may be and are different. Whatever tends to debilitate the co-ordinating centres predisposes to the ataxy, and this would be excessive use of those centres from any cause. Now as men are much more commonly engaged than women in those laborious employments which thus exhaust the motor centres, and are more exposed to cold and wet, they must in the same degree be more frequently affected, other things being equal. This, therefore, is one reasonable explanation of the observed differences as to frequency in the sexes. But men are also more liable to sensory exhaustion of the cord than women, for in the act of coition there is more exhaustion of those centres, and in connexion with a group of coordinating pelvic muscles. Hence it is that the true sensory form of locomotor ataxy is so often seen in vigorous virile men, desiring and capable of repeated coition.

In none of the monographs on progressive locomotor ataxy, so far as I have read, is there any examination of the etiology in relation to nerve-anatomy—an important point in practice,—nor in relation to the progressive degeneration of nerve-tissue which is so essential a feature of the affection. In those cases in which venereal intemperance is a chief cause, an inquiry of this kind would necessarily be directed to the anatomy and physiology of the pudic nerves. Now, if we compare the results of this cause in the two sexes, it is obvious that in women the sympathetic connexions of the sacral plexus are chiefly involved, while in man it is chiefly the spinal sensory, and the results differ accordingly; for the symptoms of undue venereal excitement in women are chiefly of the class vaguely denominated hysterical, and they do not manifest the character of progressive advance to structural degeneration. Looking to the state of the *nervi erigentes* as the primary cause, and to their action on the posterior roots and columns, it would be of importance to determine how far a sudden, short, yet great excess for the time is more dangerous etiologically than more moderate, albeit

excessive indulgence, extending over a longer period. I have had cases in which such temporary excess had been evidently the predisposing cause. In certain constitutions, although only indulged in legitimately and for a brief period, as after marriage, such excess would act like a shock or concussion of the cord, or like a blow on the head; that is to say, would constitute the starting point for a gradually developing morbid state, as is seen when injuries to the cranium and nerves of the extremities give rise to serious chronic lesions, as epilepsy, insanity, and paralysis. It is from this point of view the predisposing cause in question assumes such importance in practice.

Recorded cases prove that after allowing for instances in which the causes could be referred to some of those just discussed, provided the history had been well ascertained, a certain proportion remains, of which the origin is unexplained by any known facts of experience. Probably a hereditary predisposition may take effect from simple causes in the offspring of persons who have not manifested the symptoms sufficiently distinctly to insure recognition; or in whom a predisposition only has been induced by some of the known causes. That heredity has some influence in causation appears to be certain. Sunstroke was apparently a predisposing cause in a case under my care, which was treated successfully by nitrate of silver. One limb was more affected than the other. Certain diseases of the prepuce and glans may predispose. Mr. Bryant reports some cases of incontinence and retention of urine in children, in whom the neurosis of the bladder was evidently due to an elongated prepuce partly or wholly adherent to the glans, inasmuch as separating and circumcising it cured the infirmities (*Med. Times and Gazette*, 16th May, 1868). The order of causation here as to the functions of the bladder is of the kind just described; it is not improbable, therefore, that cystitis and urethritis may be predisposing causes of ataxy. In a case lately under my care the history traced the development of the disease to a bad stricture.

The clue to the etiology of the typical kinds of progressive locomotor ataxy is precisely of the same kind as that which explains the origin of sympathetic ophthalmia, and of the whole group of diseases dependent on progressive centripetal degeneration. The morbid changes commencing in the sensory periphery go on according to a general law, which Dr. Waller, of Brighton, was the first to demonstrate experimentally, and who was awarded a prize of 2,000 francs accordingly, by the French Academy of Science. Dr.

Waller's conclusions have been fully confirmed by Claude Bernard and others, and by pathological investigation. Hence the law has been designated the Wallerian law. His researches enable us to understand that the cause of locomotor ataxy is primarily a degeneration of the ganglia on the posterior roots—the intervertebral ganglia. These ganglia (of which the Gasserian is one) have very important relations to the nutrition of the nerve-centres with which they are in anatomical relation; so that when the ganglion degenerates, its spinal commissure (the posterior roots) and the corresponding portion of the posterior columns are successively involved, and thence the disease extends upwards into the encephalic centres either on the same side or on the opposite, according to the kind of nerve involved. Serres (the value of whose labours were of late years too lightly estimated) was the first, in 1824, to indicate this order of events in an admirably detailed history of a case of disease of the right Gasserian ganglion, and Dr. Waller (confirmed by Claude Bernard, Brown-Séquard, and others) has demonstrated experimentally what Serres observed pathologically to be the law of degeneration of nerve-tissue.

Doubtless the pathological anatomy of locomotor ataxy (as indeed of other spinal affections) is defective, but it is chiefly so because the intervertebral ganglia have rarely been examined, attention being directed almost exclusively to the spinal cord. It is generally found that the posterior columns in the dorsal and lumbar region have undergone degeneration. In two cases, however, detailed by Trousseau, the condition of the posterior roots (the intervertebral ganglionic commissures) was observed, and they were found degenerate; and in one examined microscopically by Luys both the commissures and the ganglia were disorganized. In none of the cases have the nerves beyond the ganglia been examined. Their condition must, however, be considered one of the most important points in the anatomy of sexual locomotor ataxy if we look upon the disease as primarily an affection analogous to ordinary neuralgia of the fifth, or *tic-douloureux*; for in this the disorder not unfrequently commences in the nerve-fibrils, and is propagated thence to the Gasserian ganglion, and so onwards along the so-called roots of the fifth to the Pons Varolii and the brain.

Starting then from these conclusions as to the origin and course of locomotor ataxy we can more definitely determine the seat of the disease, and therewith the prognosis and treatment. Obviously the chief distinction is between those primarily sensory and those

primarily motor. The latter are by no means so likely to extend upwards to the medulla oblongata and the basilar centres and nerves of the encephalon, as the former, and therefore not so likely to involve the senses and the understanding.







