A Lecture

ON

THE DIAGNOSIS OF TABES DORSALIS.

DELIVERED AT THE SEAMEN'S HOSPITAL, GREENWICH,

BY

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THE diagnosis of tabes dorsalis or locomotor ataxy, as it is still often called in this country, unquestionably offers difficulties, not merely to the general practitioner whose opportunities of studying the earliest manifestations of the disease and observing its rarer symptoms are not frequent, but also to specialists in different branches of medicine whom the patient may consult for one or other of its symptoms.

It is thus quite common to meet patients who have been operated upon by surgeons for various abdominal conditions in whom the symptoms were due wholly to gastric crises; I have lately seen a patient in whom five exploratory abdominal operations were performed—while the acute swelling and disintegration of joints due to Charcot's arthropathy is occasionally a source of error and has led to serious operative interference and even to amputation.

Similarly, the progressive loss of vision due to optic atrophy, or the ocular palsies so common in tabes, may offer difficulties in diagnosis to the ophthalmic surgeon; and the vesical and rectal affections, or the laryngeal palsies and crises, may be confused with similar symptoms due to local or other causes. But the difficulties which the private practitioner encounters are even greater, as it is usually from him that the patient first seeks aid, and it is he who commonly sees the case in the earliest stages of the disease when its characteristic features are not yet developed. Thus in hospital and private work the practising neurologist is often consulted by patients in whom the sudden onset of pains in the legs have been mistaken for rheumatism, neuritis, or sciatica; a disturbance of gait which may be largely subjective for a "spinal sclerosis," and numbness of the upper limbs associated with awkwardness or feebleness of movement for neuritis or "an obscure nervous disease."

But these difficulties in diagnosis and the errors they lead to can be easily understood when the facts are borne in mind that tabes dorsalis offers extremely variable clinical pictures, and is remarkably protean in its manifestations, and that on the other hand the physical symptoms on which most textbooks of medicine teach the practitioner to rely are very inconstant, and one or other may be absent in even the late stages of the disease.

These symptoms and physical signs which are usually emphasized as of importance in the diagnosis of the disease are: A staggering gait, Romberg's sign, absence of the knee-jerks, and the Argyll Robertson phenomenon, or inactivity to light of pupils that still contract well on accommodation.

All of these symptoms must have a physical basis, and their presence depends on the affection of special specific fibres or neurons that may escape for long, or through the whole course of the illness. Thus those fibres which, when involved, lead to the presence of the Argyll Robertson sign—which they are is still under discussion—may persist intact, though the pathological process be advanced in other systems of fibres; while the posterior roots, which are usually the most seriously affected, contain several categories of fibres which may degenerate separately and independently of one another. Loss of the knee-jerk, for instance, depends on degeneration of those fibres or their collaterals that pass to the motor cells in the ventral horns of the spinal cord, while Romberg's sign, which is only evidence of disturbance of the appreciation of posture and of change of position in the lower limbs, is due to degeneration of another set of fibres which may be affected together with or apart from the reflex collaterals. Similarly the ataxic gait, though as a rule largely dependent on loss of the sense of position, may be due to affection of yet another set of root fibres which terminate in Clarke's column, through which unconscious afferent

impulses are conveyed to the cerebellum, which is known to exercise a constant controlling and co-ordinating influence on volitional movement, and especially on those which maintain equilibrium.

It is therefore easily understood that any one of these so-called cardinal symptoms may be absent in even advanced cases, and their presence is therefore not essential or necessary for the diagnosis of tabes dorsalis.

In a considerable proportion of early cases the knee-jerks, for instance, persist or may be even exaggerated, and occasionally remain so till late in the disease. Again, if the sense of position is intact or only slightly affected, Romberg's sign, or great unsteadiness when the eyes are closed, does not occur; while the Argyll Robertson sign appears only when certain optic-pupillary fibres happen to be affected.

On the other hand, symptoms and signs scarcely less common than some of the above may develop when the neuronic disease involves other portions of the nervous system. Tabetic blindness is, for instance, due to a primary atrophy of the fibres of the optic nerve; vesical symptoms to that of those that control the normal functions of the bladder and its sphincters, and gastric crises probably to lesions in the afferent sympathetic fibres.

If these symptoms and signs called cardinal are not always sufficient to assure the diagnosis of the disease, especially in its earlier stages when diagnosis is most difficult but most important, we must consider on what signs accurate diagnosis can be based. It is not, however, my intention to attempt in this lecture a review of the clinical features of the disease, which indeed can be obtained from any textbook, but to describe briefly certain signs which are essentially practical, that is, easily investigated and yet of prime importance in the differential diagnosis of tabes dorsalis.

PAIN AND PARAESTHESIA.

From the pathological point of view tabes is a disease of the sensory, or, more correctly, of the afferent, systems, and we may therefore expect to find sensory symptoms and disturbances of sensation its most characteristic feature; and it is certainly so. It is the pains or paraesthesiae that most often bring the patient under observation, and even from the earliest stages disturbances of sensation are the most significant and the most valuable of the physical signs.

In all nervous diseases the history of the onset and development and the subjective features of the illness are of enormous importance for the diagnosis; sometimes, indeed, as in epilepsy, the diagnosis must be based almost entirely upon them, and tabes dorsalis is no exception to the rule. When the patient's story is fully and carefully taken, directed, of course, by the physician towards the issues that appear most important and pertinent, but not confused by leading questions, much valuable information can be obtained. The description of the lightning pains, for instance, their irregular incidence, their momentary duration, their intense sharp or burning nature, and the soreness and stiffness they leave behind, is most significant, and, in fact, almost characteristic of the disease. They are liable to be confused only with the pains of a bilateral or general neuritis, or with those that result from lesions of the dorsal spinal roots or of the nerve trunks. But in taking such a history the most important point is to insist that both patient and physician attach the same meaning to the same terms. "Shooting pains" or "lightning pains" are, for instance, often employed to describe pains in no way similar to those of tabes, and it is quite common to meet patients seeking advice for "rheumatic pains" in the legs, which, on further questioning, are found to be characteristic lightning pains; dull, persistent, aching pains, such as are usually described as "rheumatic," do, of course, occur in tabes.

But the common girdle sensations, or persistent or intermittent local thoracic or abdominal pains, are even more frequently sources of error or confusion than the pains in the limbs. It is surprising the number of cases that are operated on for some intra-abdominal complaint, or "explored" unnecessarily when a little patience in analysing or completing the patient's history would have been sufficient to indicate the necessity for fuller examination. The girdle sensation, for instance, is frequently a feeling of acute distension,

or of being blown out, and a patient whom I recently saw had been operated on—of course without the slightest effect—probably on the diagnosis of intestinal obstruction, as vomiting and constipation were associated with it, as they frequently are. And another patient with persistent right-sided abdominal pain, which on investigation was found to extend round the whole of this half of the trunk, and uniformly over several peripheral root areas, and thus apart from the complete cutaneous analgesia with which it was associated was unlike pain of abdominal origin, had been twice operated on—in the region of the appendix, and in the neighbourhood of the gall bladder or duodenum.

Similarly, the common paraesthesiae, the sensation of numbness or loss of feeling, especially in the distal portions of the limbs, and the feeling of walking on air or on a thick carpet or cushion, which, as Hughlings Jackson pointed out, is due to disturbance of the sense of position in the lower limbs and not to cutaneous loss, often fail to direct attention to, or raise a suspicion of, tabes dorsalis.

ANALGESIA.

But it is the sensory disturbances, revealed only by examination, and of which the patient is often unconscious, that afford the most valuable and characteristic diagnostic signs.

That which is easiest to investigate, and is at the same time the most important, is the analgesia, or the diminished or lost sensibility to pain, whether produced by cutaneous stimuli, as by a pin-prick, or evoked by pressure on the deeper structures, as the muscles, tendons, and bones.

When sensation to cutaneous pain is tested with the point of a sharp steel pin or needle, widespread disturbances are usually found in even the earlier stages of the disease. But even this simple test requires some care, as the insertion of a pin-point evokes, as well as pain, an idea of sharpness, by which the nature of the stimulus can be often recognized in even analgesic areas, and unintelligent patients may consequently make replies that may confuse the observer. This difficulty is obviated by placing the point against the tip of the observer's index or middle finger and pressing gently with the finger on the patient as the pin penetrates his skin; then, too, the patient can be asked to reply whether each contact is only a touch, or if there is a prick as well. This may be known as the "covered point method."

The earliest loss of sensibility to pin-prick is usually found on the lower limbs; it is most marked on their distal segments, and diminishes gradually in intensity toward the groins. It does not correspond to peripheral root distribution, as it is not as a rule greater on the buttocks, which are innervated by the sacral roots, than on the front of the thighs, which are supplied by the upper lumbar, though more distinct on the feet and legs, in part of the territory of the first sacral and lower lumbar roots, than in either. Occasionally, however, a tendency to root area limitation is present.

At first, and often in the later stages of the disease, this disturbance of sensibility to pain is only partial; either the pain evoked by the stimulus is less than that the prick produces elsewhere, or more common only it is found that when the pricks are of moderate intensity but sufficient to cause pain in the normal person, only a certain proportion are recognized.

As the disease advances this hypalgesia becomes gradually more and more intense, and not uncommonly patients even in the so-called pre-ataxic stage appreciate no discomfort from a pin-prick on any portion of the lower limbs.

Before this stage is reached certain anomalies of sensation to pain are often present, which are extremely characteristic of tabes dorsalis. The most common of these is a delay in the perception of pain, as two or more seconds may elapse between the prick and the patient's reply or reaction to it. In other cases a prick apparently excites abnormal sensations, which are described as burning or tingling, or the pain it evokes may persist unnaturally; under these circumstances the patient very commonly attempts to "rub the feeling away."

Almost as common, even in early cases, as disturbance of pain sensibility in the legs is a zone of diminished or absolute loss of pain around the trunk, to which Laehr first drew attention. The upper margin of this zone

almost constantly lies at the level of the second rib in front—that is, the level at which the areas of the cervical and dorsal roots meet, while it may extend downwards only a few inches or as far as the groins. As a rule, however, the hypalgesia is greatest between the second ribs and the nipples, while the zone around the trunk immediately above the groins and buttocks is that which generally escapes longest. The loss of pain sensibility in this trunk zone is usually more profound than that on the legs; when it is only partial it can be easily demonstrated by making a series of pricks from below upwards to the clavicles or on to the neck; then the patient easily distinguishes the difference between the sensations evoked by the same stimuli in the hypalgesic and in the normal parts, and often reacts vigorously when the latter is reached.

Frequently the analgesic or hypalgesic zone around the thorax is continuous along the axilla, with an area of diminished sensibility to pin-prick on the ulnar borders of the arms; but this usually occurs later in the disease. Often this area on the arms is not continuous with the thoracic zone. It is variable in extent, and may be represented by a narrow band in the inner border of the forearm, or may comprise the whole ulnar half of the limb, including the two or three ulnar fingers. Here, too, as on the legs, the insensibility is rarely absolute, and is often represented only by the relative insensibility of these areas as compared with the radial border of the arm.

Unlike the analgesia on the legs, that on the arms is usually radicular in distribution, the skin area of the first dorsal root being generally first involved, but it may spread over the whole limb.

Years ago Duchenne observed that the face is occasionally analgesic in tabes, or rather that portion of it which is supplied by the trigeminal nerve—that is, roughly, all except the skin immediately in front of the ear; he spoke of it as "*le masque tabétique*," but this is certainly a rare occurrence. On the other hand, some loss of sensibility to pin-prick is extremely common on an irregular and indefinite area in the centre of the face, especially on the nose and the neighbouring portion of the cheeks; this has attracted my attention for the last ten years at least, and I have frequently found it an extremely valuable sign in the diagnosis of tabes. It is remarkably common, and it may occur very early in the disease; some years ago, in examining a large number of cases, I found it in about 70 per cent. It is further important as sensory loss of this distribution is not found in any other central or peripheral nervous disease, except, perhaps, in leprosy. It is easily demonstrated; for, as any one can ascertain on himself, on probably no part of the body is the prick of a sharp pin so painful as on the nose and the adjoining portions of the cheeks, and it is exactly here that sensibility to pain is often either lost or diminished in tabes. The area affected may vary from a small patch on the nose to the greater part of the face, until, indeed, it forms a typical *masque tabétique*. It is best tested by the "covered point" method, and if slight the loss of sensibility on the nose and cheeks may be apparent only when contrasted with that of a normal area, as over the angle of the jaw or on the neck.

The diminution, loss or alteration of sensibility to pin-prick in some or all of these areas—that is, the distal portions of the lower limbs, the thoracic zone, the radial borders of the arms, and especially the central portion of the face—constitutes the most common, the most definite, and the most characteristic physical sign of tabes dorsalis.

Diagram to illustrate the more common distribution of the alteration in sensibility to pain in tabes dorsalis. The arrows indicate the directions in which the analgesia tends to spread.

It is frequently present when the knee-jerks and the pupillary reactions are normal, and before ataxia or other prominent symptoms develop, and it is consequently the most important phenomenon in the diagnosis of the disease.

Deep Analgesia.

But the pain produced by pressure on the deep structures of the body is almost as constantly affected, and when it is altered it is an equally important—perhaps more important—symptom, for though cutaneous analgesia may be found in peripheral neuritis and other diseases, deep analgesia is almost peculiar to tabes, excepting syringomyelia and a few rarer central affections.

If any muscle, as those of the calf, is pinched firmly between the fingers and thumb, or pressed upon strongly by any blunt object, as the end of a pencil, considerable pain of a peculiar intolerable character is produced, but in tabes even the strongest pressure may evoke no discomfort. Similarly, pressure over the bones, as on the tibia or tarsus, may be painless, and firm pinching of the tendo Achillis or other tendon, which, if sufficiently strong, is most excruciating to the normal person, may give no pain or only slight discomfort. Insensibility of the tendo Achillis has been described as Abadie's sign.

This diminution or loss to pressure pain is often present in the earliest stages of the disease; it is usually first found and is generally most pronounced in the distal portions of the lower limbs, and diminishes proximalwards, but it can be often demonstrated on the trunk, and even in the upper limbs.

This insensibility to painful pressure is not limited to the somatic structures, as the testicles can be often squeezed firmly without giving discomfort, as well as the trachea, eyeballs, and other structures in advanced cases.

The value of this deep analgesia in the diagnosis of tabes lies in the fact that it can be easily demonstrated if present, and that it is so characteristic of this disease. But, as in all other signs of tabes, it may be absent or little pronounced in the early stages of the disease.

Disturbances of Tactile Sensibility.

Other forms of sensibility also suffer in tabes, but their disturbance is less characteristic and pathognomonic, and therefore less significant for diagnosis, though they form an integral part of the disease, and are important in the interpretation of its symptoms.

Touch is on the whole much less affected than pain sensibility, but some hypo-aesthesia to light touch, as with a wisp of cotton-wool or a camel-hair brush, can be often discovered in the early stages of the disease, and may be intense in advanced cases. It is usually most pronounced in the distal portions of the lower and upper extremities, and diminishes gradually towards the hips and shoulders. As a rule, the loss does not correspond to root distribution, though a zone of diminished tactile sensibility can be often demonstrated by careful testing over the analgesic thoracic area even in early cases. I have rarely found definite anaesthesia on the face except when, as occasionally happens, the trigeminal nerve is completely degenerated. Occasionally a touch, and especially a moving contact, as the rubbing of the patient's clothes over the skin, may excite considerable pain and discomfort. This phenomenon has been frequently described as hyperaesthesia, but on careful examination it is usually found that there is actual diminution of sensibility with a raised threshold over the areas where it exists. Lannois's term *aphalgesia*, or pain to contact, is therefore more suitable. This condition is evidently related to the exaggerated reaction to thermal stimuli which we shall consider immediately.

Heat.

Thermal sensibility is more commonly and more seriously affected than tactility, but its examination is so difficult, and without great care may lead the practitioner so easily into error or confusion, that its significance must not be emphasized in a lecture which attempts to be essentially practical. The appreciation of moderate degrees of both heat and cold is often lost early or much diminished, especially over the legs and feet and on the zone round the trunk, over the same distribution and parallel with the analgesia. The upper extremities are usually affected only late. The extreme degrees of heat and cold, and especially the latter, can usually evoke

sensations, unless the disease is severe, though they may be confused by the patient, cold being described as "very hot" or "something burning," or heat as "very cold." Or over certain areas, more especially on the front of the abdomen or on the back, cold and occasionally heat produce more discomfort than in the normal person, and even actual pain; many tabetics, for instance, cannot bear a drop of cold water on their bodies, though the limbs may be more or less insensitive to temperature, and to others a hot bath may be intolerable.

Sense of Position.

Finally, the sense of position and sensory faculties related to it, as the recognition of form by touch, the appreciation of weight and the distinction of two simultaneous contacts, are regularly affected in tabes and are the basis of many of its more obvious disturbances, as the ataxia of movements which cannot be controlled by vision, and the uselessness of limbs which are strong and not very inco-ordinate in movement. Romberg's sign and the difficulty in maintaining the erect attitude or walking in the dark, are wholly due to disturbance of the sense of position, while the common complaint of tabetics that they cannot write properly or use their hands in finer actions, is due to the same cause or to disturbance of other forms of sensation. In fact, the control of movement and the purposeful employment of the limbs is dependent on these sensory impressions, and may be practically undisturbed, despite severe or complete loss of tactile, pain and thermal sensibility.

The investigation of these forms of sensation is, however, tedious and difficult and demands much time and the intelligent co-operation of the patient. For practical diagnostic purposes, only the sense of position requires notice. Its affection in tabes is extremely variable, and there is no doubt that it may persist intact till relatively late in the disease. In certain patients it is, however, an early sign, and can be always demonstrated first in the distal segments of the extremities, and, as a rule, in the lower earlier than in the upper limbs. Romberg's sign is a convenient but rough method of estimating its affection in the lower limbs and at the hips.

Though I emphasize the great importance of sensory changes in the diagnosis of tabes, it must be admitted that occasionally in early cases, as in patients who come under observation with a primary optic atrophy and only later develop tabetic symptoms, even careful examination may fail to reveal them, but at this stage most other signs of the disease are usually absent too.

REFLEXES.

After the examination of sensation we must turn to the state of the reflexes as a guide to the diagnosis of tabes, but this is less important and less reliable, for the tendon-jerks or deep reflexes which frequently disappear in this disease may be lost in many other relatively common affections, as neuritis and infective and toxic conditions, and in a certain proportion of tabetic patients they persist till late in the disease; on the other hand, the superficial reflexes, as the abdominal and the plantar, usually remain unaltered.

Though most textbooks emphasize the loss of the knee-jerks as the most important sign of tabes, and many practitioners are reluctant to diagnose this disease if the knee-jerks persist, there is no doubt that these reflexes can be elicited in a considerable proportion of early cases, as when it is the upper limbs that are chiefly affected, for example, in "cervical tabes," or when the patient seeks advice for isolated symptoms, as pains, gastric crises or ocular disturbances.

Further, in certain cases the knee-jerks are actually exaggerated, owing, perhaps, to the coincidence of syphilitic spinal lesions or a meningitis. And it must be remembered that though it is generally assumed that the absence or presence of the knee-jerks is easily determined, it not uncommonly happens that the practitioner is unable to obtain them though they are normal; this is generally due to the patient, consciously or unconsciously, keeping the flexors of the knee contracted, and to obviate this danger the observer should always place his fingers on the tendons of the hamstrings when testing the jerk to make sure they are relaxed. This difficulty is less liable to occur if the jerks are tested as the patient lies on his back, and the

observer raises the knee only with his left hand placed in the popliteal space; or, as I always do when in doubt, as the subject lies on his side with the lower limbs slightly flexed and his attention diverted. I have, for instance, seen persons claiming compensation for serious nervous injuries of which the only evidence was reputed absence of the knee-jerks, though they could be at once and readily obtained by this method.

The practitioner's attention is generally focussed on the knee-jerks, but these are scarcely more important than the ankle-jerks in the diagnosis of tabes, and the ankle-jerks are often lost much earlier in the disease; further, if present, they are more easily elicited than the knee-jerks. The arm-jerks, that is the biceps or flexor, and the triceps-jerks, on the other hand, often persist much longer, unless the disease affects chiefly the cervical roots of the spinal cord.

The abdominal reflexes usually remain unaltered unless there is considerable anaesthesia of the abdominal wall, but the plantar reflexes are often difficult to obtain when there is much sensory loss in the soles of the feet. Their absence is therefore of no significance, but when they can be obtained the response is a normal flexor movement of the great toe. Babinski's sign does not occur in uncomplicated tabes.

OCULAR SIGNS.

It is unnecessary to emphasize the significance of the pupillary and ocular signs of tabes dorsalis. As is generally recognized, Argyll Robertson's sign, or the inactivity on exposure to light of pupils that contract briskly on accommodation, is extremely common and very characteristic, but even this is often absent in relatively advanced cases, and the disturbance of the light reaction is occasionally not typical. The pupils, for instance, may react, but more slowly and incompletely than normally, or one only may react poorly or not at all. Loss of the consensual reflex—that is, failure of one pupil to contract on the sudden exposure of the opposite eye to light—seems to be often the first sign of any anomaly in its reaction. In tabes the pupils are also characteristically small, but not always so, and they are frequently unequal in size and irregular in outline, though this is usually regarded as more characteristic of general paralysis, which, indeed, both etiologically and pathologically is not sharply separable from tabes. It must not be forgotten that in addition to tabes and general paralysis, Argyll Robertson pupils may occur in cerebro-spinal syphilis, and more rarely in certain lesions in the neighbourhood of the upper end of the mid-brain.

The most common and characteristic of the other ocular signs is a slight ptosis, which gives a peculiar, almost pathognomonic, expression to the tabetic, by which those who frequently see the disease can often diagnose it at the first glance. The lids hang low, and there is at the same time a compensatory wrinkling of the forehead, but on the attempt to look up no evidence of paresis of the levator palpebrarum is usually visible.

Isolated ocular palsies producing squint and diplopia, or ptosis are common early and initial symptoms, and the diagnosis of their cause often gives considerable difficulty. They present no special features suggestive of tabes, excepting the chance coincidence of unequal, irregular, or inactive pupils. Slowly progressive blindness due to a primary optic atrophy is also a not uncommon early symptom; tabes is perhaps the most common cause of this condition, and should always be suspected if the blindness is slowly progressive, if the loss of sight is not due to a central scotoma, and if ophthalmoscopic examination reveals the appearances of a primary optic atrophy.

As we are considering chiefly the facts on which a diagnosis of tabes can be most easily and most definitely made, it is not necessary to refer to the character of the frequent disturbances in the functions of the sphincters, or the features of the crises and trophic disturbances that occur in the disease.

WASSERMANN REACTION.

But, as in other branches of medicine, the aid of laboratory methods is gradually becoming more and more important in clinical neurology, and the clinical pathologist has now means of diagnosing tabes with an extraordinary accuracy even from its earliest stage.

It is now generally admitted that, as Erb, Gowers, and Fournier originally maintained, tabes is a post-syphilitic disease, and the diagnosis of tabes necessarily postulates a previous syphilitic infection. But tabes, as its congener general paralysis, develops as a rule several years after the infection, and is rarely, as Mott has emphasized, associated with any evidence of active syphilitic processes, and it is consequently not surprising that a positive Wassermann reaction should be obtained in the blood serum in only a moderately large percentage of cases of tabes—in from 60 to 75 per cent. Further, as a positive Wassermann reaction may be found in the serum of any person who has had syphilis, it is evident that this test is of little value in the diagnosis of tabes, and more especially so since it can be often abolished by proper antisyphilitic treatment, by mercury or salvarsan. On the other hand, when the cerebro-spinal fluid obtained by lumbar puncture is tested quantitatively, to the Wassermann reaction—that is, when larger proportions of cerebro-spinal fluid are used than are employed in the original method—a positive reaction is obtained almost constantly, as Hauptmann first showed, or according to Nonne in at least 95 per cent. of the cases. If a negative reaction carried out in this manner does not therefore exclude it, it makes the diagnosis of tabes at least improbable.

But further and not less valuable evidence may be obtained by the microscopical and chemical examination of the cerebro-spinal fluid. Normally this fluid contains very few free cells, but in tabes there is almost invariably a great increase of lymphocytes in it, which can be easily determined by examining a centrifugalized deposit, or more accurately by counting the cells in a ruled chamber under the microscope. The amount of globulin in the fluid is also increased in tabes, and this increase can be easily demonstrated by Noguchi's butyric acid test, or by half saturating the fluid with ammonium sulphate.

As, however, a positive Wassermann reaction to the quantitative method, and an excess of cells and of globulin in the cerebro-spinal fluid also occurs in general paralysis and in certain cases of cerebro-spinal syphilis, these laboratory tests cannot decide for or against the existence of tabes without the co-operation of careful clinical examination.

SUMMARY.

We may therefore conclude that the characteristic subjective and objectively demonstrable disturbances of sensation are usually the earliest, the most important and the most unequivocal clinical signs of tabes dorsalis; that they are frequently associated with loss of certain of the deep reflexes, especially of the ankle-jerks and knee-jerks, and with pupillary, ocular and other less frequent symptoms and physical signs; and that modern serological, cytological and chemical methods can supplement and confirm the clinical diagnosis based on these clinical signs, and make the positive or negative diagnosis of tabes dorsalis as certain as anything can be certain in clinical medicine.

THE New York State Nurses' Association is (we learn from the *Medical Record*) endeavouring to standardize the education of the nurse. This movement received the approval of the New York State Federation of Women's Clubs at its annual meeting at Buffalo in October, 1913. A bill introduced into the New York State Legislature last winter was successfully opposed on the ground that it sought by legislation to limit the right to use the word "nurse" as a title to those who had been duly licensed. There is already in existence a law which protects the title "registered nurse" or the abbreviated "R.N." The Nurses' Association, however, points out that this title in usage does not help the public to discriminate between the "fitly trained" and the "unfit" nurse; people are confused by the many terms which are in general use, such as "certified," "trained," "graduate," "domestic," and "practical." On the initiative of the association a bill, virtually the same as that rejected last year, will be introduced during the course of the present session. It is not intended that the proposed law shall be used for the prosecution of a mother for nursing her child, or a maid for nursing her mistress, or any one for nursing another person, as long as the title "nurse" is not used professionally. The definition in the bill is as follows: "To practise as a nurse within the meaning of the article shall include the care of the sick or injured as a nurse or registered nurse."