It is interesting to compare these two cases, for certainly there was very great resemblance in their symptoms; but the diagnosis of the latter was rendered easy by physical examination, whereas in the former case physical examination exhibited a morbid condition, upon which opinions did not coincide.

The other case of pelvic cellulitis resembled the subject of our lecture, not in the symptoms, but only in the position of the tumour. The left iliac fossa was the seat of the abnormal enlargement—a disease which had commenced a few weeks after parturition, and which at the present time is suppurating. When she first came under our notice suppuration had not commenced, and we had to reason out the character of the somewhat hardened mass occupying chiefly the iliac fossa. The history of the case and the labour became the clue in which I found the diagnosis, whilst the character of the temperature chart, that of a chronic abscess—namely, high at night and low in the morning, without variation—left no doubt as to the exact pathological condition.

I have endeavoured to show you in this lecture that the case was an obscure one, on which there might well be different opinions expressed. That a comparison of the symptoms with those of caries of spine and with forms of cellulitis led me to doubt the probability of it being either of those two diseases, whereas a comparison with cases of internal cancer formerly under my care led me to decide it a form of that disease.

The peculiar coincidence of two coins being found imbedded in the cancer added somewhat to the difficulty of diagnosing the case, and also doubtless brought about an earlier fatal termination. It is probable that the margin of the coin was the cause of the ulcerative perforation of the intestine, and hence of the fluctuating cavity which threw the chief obscurity upon the case. How they came there did not transpire, or why they should have adhered together and permanently fixed themselves in the growth instead of passing away with the faecal excretion, which was not interfered with, is scarcely evident from the nature of the growth.

EYE SYMPTOMS IN LOCOMOTOR ATAXY.¹

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THE author first alluded to the great number of very different symptoms in this disease, better called *tabes dorsalis*, since the gait might be normal. He referred to the fact that some of the symptoms were occasionally found in other diseases. At present we have to study the symptoms as they occur in association or in sequence. In this paper three well-marked non-ocular tabetic symptoms were taken and considered in connexion with certain ocular symptoms. Twenty-five cases in different stages furnished the material for the communication.

a. Non-ocular symptoms. (1) *The "lightning" pains.*—There is a succession of sudden, small, severe short pains in batches. As Pierret and Buzzard have pointed out, these pains may occur about the head, although they occur mostly in the legs, trunk, and arms. Charcot and others have observed eruptions in the parts seized by pains. Buzzard has published the case of a patient (whom he permitted the author to see) who, with every batch of pains, has a small crop of herpes; this patient has double optic atrophy and Westphal's symptom (absence of so-called patellar tendon-reflex), as well as the pains; he walks well. An interesting feature in this case is that the patient had for several years crops of herpes before batches of pain, and then always both together. It is most important to note that pains are denied by some patients, who, nevertheless, have them. Many patients see no relation betwixt their pains and their amaurosis or ataxy, especially if the pains come years before. This one patient strenuously denied having any pains, but it came out, as it were accidentally, that

he had had sciatica; really he had had true lightning pains. He had optic atrophy and Westphal's symptom. Many of those who deny pains will admit that they have long been subject to rheumatism or to neuralgia, or to "flying gout," and will describe these things so that it is certain they are lightning pains. It is often difficult to get a patient to fix his mind upon his pains. A patient, aged fifty-four, had recently continuous severe pain in the toes and sides of his feet. This he admitted to be one of the symptoms of his disease, but ignored lightning pains, which he had, on and off, for twenty years; those pains were, he would have it, "only gout." It was difficult to get him to attend to questions about them. He had had incontinence of urine nine years; difficulty in walking, according to his account, six months according to his wife, slightly for about eighteen months earlier; his gait was only slightly ataxic. There was Westphal's symptom. The ocular symptom was that his pupils, which were small, did not contract to light. It is to be insisted on that a patient may have for very many years the pains before any of the striking symptoms of *tabes dorsalis*. "I have recently seen a patient, about sixty years of age, who had pains which I concluded to be 'lightning' for about twenty years. His gait was normal; by most careful testing I could find nothing the matter with it. The patient had besides, of late years, attacks of what he called sickness, but really faintness, with intense depression for hours. That these were slight gastric crises I could not be sure; they possibly depend on derangement caused by very large quantities of opium he had taken for relief of pain. The narcotic taking was evidence of the severity of the pain; he began this practice many years ago. Hearing his account of pain, I looked for Westphal's symptom, and found it. He had an ocular symptom, too. The pupils did not contract at all to light, and, I thought, very sluggishly, during accommodation. I do not in the least doubt that this is a case of posterior sclerosis; Charcot and Bouchard report a case in which pain had been the only symptom; the necropsy showed commencing sclerosis of the posterior columns." (2) *Westphal's symptom* ("absence of knee phenomenon," "loss of patellar tendon-reflex").—"Everybody knows that smart tapping just below the knee in healthy people makes the leg jump up. As Westphal and Erb point out, this does not occur in the great majority of cases of *tabes*. There is no doubt of the correctness of this statement. The jumping up upon the tapping is usually called patellar tendon-reflex, but as this name involves a theory much disputed and not accepted by the discoverer of the symptom, I will call the loss of this so called reflex 'absence of the knee phenomenon,' or Westphal's symptom. It is by no means easy to be sure of the absence of the knee phenomenon. We should bare not the knees only, but the legs, let the trousers down, and take off tight drawers; then we should make the patient sit on the edge of a table with his legs hanging loose, and hit carefully both with the hand and a hammer. I am quite certain that the knee phenomenon is said to be absent when it is not. It is admitted that in cases which are evidently not cases of *tabes*, Westphal's symptom is present. Thus in atrophy of the quadriceps the knee phenomenon cannot, for obvious reasons, occur. Buzzard has published a case of diphtherial paralysis, in which there was Westphal's symptom. On the patient's recovery from the paralysis the knee phenomenon returned. I have seen it absent in a case of diphtherial paralysis, but have not heard of the progress of the patient." (3) *The ataxic gait.*—Under this head the author gave briefly the explanation of the gait of *tabes dorsalis*, which he gave in THE LANCET, Jan. 30th, 1875, and the *Medical Times and Gazette*, July, 1873. He believes the so-called disorder of coördination to be a double condition—paresis of some movements and over-action of others. He illustrated by the duplex effects of paralysis of ocular muscles. A similar explanation has since been given by Pierret.

b. Three eye symptoms.—"One great question of interest is as to the frequency with which eye symptoms are the earliest symptoms. Since the Argyll Robertson's symptom does not inconvenience patients, it is hard to say whether it is ever first or not. I was never consulted for that symptom, although, as I shall mention shortly, I was once consulted for a condition somewhat like it. Excluding from consideration for the moment Argyll Robertson's symptom and Westphal's symptom, since we cannot learn anything of them from the patients' accounts, I found in nineteen cases that the earliest symptoms were as follows: in ten

¹ Abstract of a paper read at the meeting of the Ophthalmological Society of the United Kingdom, Dec. 9th, 1880.

cases pains, in six double vision, in one abnormal gait, in one optic atrophy, in one mental symptoms; probably the last was a case of general paresis. The pains are often neglected in taking note of the earliest symptoms; manifestly this puts all wrong; makes the case seem to begin months or years later than it really does." (1) *Paralysis of parts supplied by oculo-motor nerve trunks*.—Several cases were alluded to under this head. "A man aged sixty-three, who twelve months before had had paralysis of parts supplied by the left third nerve. I could find no symptom of tabes with one very important exception; this was Westphal's symptom. Not very long ago I should have had to say that he had no symptom of tabes. I could only have guessed tabes. Thanks to Westphal, I now feel sure that this patient is tabetic. It is important to say expressly that this patient's pupils acted well to light and during accommodation; he had no pains of any sort anywhere. He complained only of a heaviness in his head."

(2) *Alterations of pupils*.—The common condition described is what is called the Argyll Robertson pupil; the pupil does not act to light, and does act during accommodation. This has been observed in tabes by Hempel, Vincent, Erb, Hutchinson, and others. It is a double condition, negative and positive, and in this way resembles the so-called disorder of coördination of locomotor movements. Erb calls the condition of inactivity of the pupil, "reflex pupillary immobility," and advances an hypothesis as to its fundamental community of character with Westphal's symptom. That hypothesis, however, had been previously made by Buzzard; he points out that both in Westphal's symptom and in the Argyll Robertson symptom there is loss of a reflex movement when the more voluntary movement is retained. Buzzard's hypothesis seems to harmonise with the explanation suggested as to the peculiarity of the gait. It must be remembered that we have not merely an affair of light and pupil. It is well known that brisk cutaneous irritations cause the pupil to enlarge; pinching a comatose man will often enlarge his pupils. Erb tells us that the pupils inactive to light in cases of tabes are not affected by such procedures; he says, too, that they are not affected during lightning pains. Frequently the tabetic pupil when inactive to light is myotic also. We have in all cases to consider the size as well as the immobility of the pupil; we must remember in this regard that the senile myotic pupil contracts to light. "Although much impressed by Buzzard's generalisation already mentioned I adopt no theory on the duplex condition of the pupil. I show a diagram copied from a paper by Erb (Seguin's *Archives of Medicine*, Oct. 1880) which gives that physician's view of the central conditions corresponding to the double pupillary condition. The following case is, in my experience, a very rare one. A woman aged twenty-six was sent to me simply because her right pupil was larger than the left. It had been so three years. The right pupil was dilated, and absolutely motionless to light, and also during accommodation. Yet her ciliary accommodation on this side was perfect. This was severely tested by Mr. Couper. She could read No. 1 Jaeger from fourteen inches up to five, or by effort to four. The field was perfect. The fundus was normal, except that the veins were large, and convoluted at the disc, probably physiological; the media were clear. Her sight with this eye was perfect. The pupil of the left eye was most active, and of normal size; the left disc was slightly paler than the right; the veins as on the right; macula normal; doubtful slight limitation of nasal part of field. She could read Jaeger No. 2 with the left eye, but the centre syllable of a long word seemed blurred. This case puzzled me. She seemed to be in perfect health except for the ocular abnormalities mentioned. It occurred to me to test her knees. Neither I nor Mr. Couper found the smallest trace of the knee phenomenon. Several times did I re-examine into this, and pertinaciously inquire for other symptoms of tabes; there were no other symptoms of any kind. Except for the two things mentioned she is in seemingly perfect health." It is not said of Argyll Robertson's symptom that it is peculiar to tabes. It may be found in general paresis of alienists, at least reflex pupillary immobility, less frequently is there myosis, and the size of the pupils is more often unequal. Erb has found the pupillary condition in patients who had no other nervous symptoms, as well as in nervous affections which could neither be classed as tabes nor as general paresis. Again, it is not said that the action to light may not be present in very well marked cases of tabes. A man sixty-five had, as he was told by Pagenstecher, paralysis of the right external rectus in 1874; there

was a return of double vision from some cause in 1876. He was subject to pains in his legs, his gait was ataxic; there was Westphal's symptom. He was obliged to carry a catheter to draw off his water. This patient's pupils do act to light. This was observed by Mr. Laidlaw Purves also, to whom the patient was sent for deafness. The following statement refers to cases from the pupil point of view. There were thirteen cases in which there was no optic atrophy. In ten of them the pupils did not act to light (in one case the pupil on but one side was inactive and was so in all ways). In nine of the ten cases of inactive pupils there was Westphal's symptom. Now as to paralysis of the oculo-motor nerves in the same thirteen cases. In one case with normal pupils and Westphal's symptom there had been paralysis of the third nerve. In one case of inactive pupils with Westphal's symptom there had been temporary double vision. In another case with inactive pupils and Westphal's symptom there was paralysis of one sixth nerve. (3) *Optic atrophy*.—Tabes dorsalis is a disease which, like general paralysis, rarely occurs in women. "When clinical assistant at Moorfields, about twenty years ago, I was struck with the fact that many of the men who had 'white atrophy' of the optic discs had also pains in their legs—the pains were lightning pains. Later on, making a distinction as to the kind of atrophy, I concluded that the pains were a symptomatic link betwixt 'uncomplicated amaurosis' and locomotor ataxy. This relation had been previously noticed. In the *Medical Times and Gazette* of Sept. 1st, 1866, I wrote: 'We have (1) amaurosis without pains in the legs; (2) amaurosis with pains in the legs only; (3) amaurosis with pains in the legs and difficulty in coördinating the legs; (4) pains in the legs and difficulty in coördinating the legs, without amaurosis; (5) amaurosis without pains in the legs and with difficulty of coördination. I could now put five patients in a room showing the above sets of symptoms.' The term 'amaurosis' meant then atrophy which did not follow neuritis. I mention what I observed not with any view to priority, having none, but because what I then said, some fourteen years ago, was denied, and the authority of Duchenne, that the amaurosis in locomotor ataxy presented quite the ordinary features of atrophy of the optic nerve as it occurs from other causes, was quoted against me." The atrophy is now more particularly described as grey degeneration, and is supposed by Charcot and others to be parenchymatous. The peculiar limitation of the field of vision in cases of the atrophy in tabes is significant when we consider that the developed disease is in great part one of the locomotor system. The limitation would seem to correspond roughly to certain ocular deviations from cerebellar disease, in the way that hemiopia does to lateral deviation of the eyes from cerebral disease. In all cases of optic atrophy we should inquire for the pains, test the knees whether gait be abnormal or not. The pains are often bridging symptoms, betwixt so-called uncomplicated amaurosis and tabes. Charcot says that so far back as 1868 he pointed out that the great majority of women admitted into La Salpêtrière for amaurosis have sooner or later manifestations of tabes. He mentions one case in which the amaurosis preceded the pains ten years. Gowers has seen a case of tabes in which optic atrophy preceded other ataxic symptoms twenty years. In the twenty-five cases mentioned there were twelve of optic atrophy. In two there were also ocular paralysis, and in one a history of it; in nine there was Westphal's symptom. In one of the three without this symptom there had been no pains; gait was slightly ataxic. In the second there had been double vision ten years ago; there is now paresis of the left third nerve; this patient had pains; his gait was normal. The third case was one of atrophy of one disc, with limitation of the field outwards and downwards; this patient saw green as grey, and red as reddish-brown; he had pains; his gait was good.

SOUTH LONDON SCHOOL OF PHARMACY. — The Medals and Certificates were presented to the following successful competitors for the first B. Course on Dec. 11th, 1880:—Medal, Senior Chemistry, Mr. Prestou; Medal, Junior Chemistry, Mr. Cracknell; Certificates, Junior Chemistry, (equal), Messrs. Llewellyn and Haines; Medal, Botany, Mr. Fisher; Certificate, Botany, Mr. Frey; Medal, Materia Medica, Mr. Llewellyn; Certificate, Materia Medica, Mr. Cracknell; Medal, Pharmacy and Practical Dispensing, Mr. Haines; Certificate, Pharmacy and Practical Dispensing, Mr. Fisher.