

Two clinical lectures on dermato-neuroses, from a neurological stand-point : including cases of lesions of the median nerve, hemiatrophy facialis, vesicular eruptions, skin lesions in hysterical subjects, prurigo, chloasma, wrinkles, Raynaud's disease, acroparaesthesia and fugitive erythema / by Thomas D. Savill.

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TWO CLINICAL LECTURES
ON
DERMATO-NEUROSES, FROM
A NEUROLOGICAL STAND-
POINT;

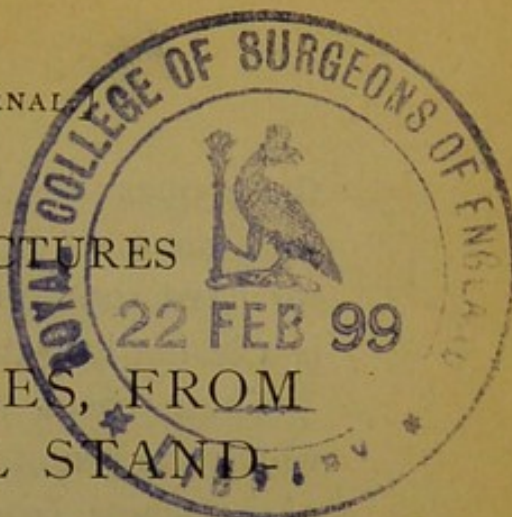
INCLUDING CASES OF
LESION OF THE MEDIAN NERVE, HEMIATROPHY
FACIALIS, VESICULAR ERUPTIONS, SKIN LESIONS
IN HYSTERICAL SUBJECTS, PRURIGO, CHLOASMA,
WRINKLES, RAYNAUD'S DISEASE, ACROPARÆS-
THESIA AND FUGITIVE ERYTHEMA.

BY THOMAS D. SAVILL, M.D.LOND., D.P.H.CAMB.

LECTURE I.

GENTLEMEN,—The subject of to-day's lecture is one of considerable interest, but unfortunately it is not such a simple one as would at first sight appear. You would imagine that, the skin being so accessible to view and to investigation, light would early be thrown upon this department of neurology. But it is not so; and we have few or no precise data from which to deduce general principles. The questions before us are, first, does the nervous system produce morbid effects in the skin? and secondly, if so, what are the effects produced, and what lesions produce them? In order to answer

Savill.



2.

these questions, I propose to ask you to consider with me a series of cases of skin disease in which we have reason to believe that the primary cause is a lesion of some part of the nervous system.

These cases will be grouped into (*a*) those in which the lesion is situated *in the course of a peripheral nerve (sensory or mixed)*; (*b*) those where the lesion is probably situated in the *central nervous system* (brain or cord); (*c*) those where the lesion is to be found *at the end* of a centripetal or sensory nerve; and finally (*d*) those in which the mischief is located in some part of the *sympathetic nervous system*. Not a little difficulty arises from the fact that in each of these divisions the nerve lesions may be either *destructive* or *irritative*; and also from the fact that the effect on the skin may be produced either in a *direct* manner by a centrifugal nerve impulse passing directly from the point of disease to the skin, or by a *reflex* method in which the nerve influence goes first to some centre, from which it is afterwards reflected to the skin.

(*a*) *Lesions of the peripheral nerves (sensory or mixed)*.—I am extremely fortunate in being able to present to you a case, D. F—, which answers the first of our questions in a very definite manner, and affords valuable material for a reply to the second. This man is thirty years of age, and is now acting as a 'bus conductor. It is just ten years since he came under my care for

one of the most severe attacks of tetanus that I have ever seen. Chloroform was administered, and he was rescued from the jaws of death by this and chloral hydrate, of which he took nearly 200 grains in twenty-four hours. From the point of view of cure by chloral hydrate the case is described in the 'Lancet' of November, 1888, but in one of the paroxysms, whilst he was under chloroform, I divided the median nerve (September 28th, 1887). The ends were loosely connected, remaining distant from each other about half an inch, by a piece of antiseptic catgut. It ought to be mentioned that this was before the time when the tetanus bacillus was known and identified, and when it was thought that division of the nerve trunk connected with the seat of injury was a legitimate procedure. He made a good recovery, and from the time of the operation the case may be divided into three periods: first, a period of about two months, when the median nerve was the seat of a destructive or paralytic lesion, when the ends were too far apart to unite; secondly, a period of about six months, when the nerve was the seat of an irritative lesion in attempted repair; thirdly, a stage of complete repair and speedy restoration of functions.

On recovering from the tetanus it was, of course, found that he had paralysis of all the muscles, and anæsthesia of the skin supplied by the median nerve. The skin over the radial half of the arm and hand was more congested and perspired more

readily than the ulnar half, but it was also smooth and glossy. The first and second fingers rapidly became thinner, showing atrophy of the tissues. The skin was thin, and the hairs on it ceased to grow on that side of hand and arm. These were the symptoms of the paralytic stage, or stage of destructive lesion. These symptoms, it was thought, would pass away, but they did not, and at the beginning of the third month the irritative stage commenced. Dr. de Watteville, who kindly saw the case, quite agreed that the nerve was the seat of an irritative lesion, as evidenced by the muscular and electrical changes. The patient had neuralgic pains and tenderness along the course, and at certain points in the distribution of the nerve. There was a slight return of power, but a good deal of painful contraction of the muscles. As regards the skin, in the course of December vesicles appeared on the knuckles over the terminal joints of the index and second fingers without obvious cause. The skin over the radial half of the palm was redder and more wrinkled than that on the ulnar half, and it perspired much more readily. The vesicles continued to appear in crops during the ensuing six months. Various kinds of treatment were of no avail, and on June 8th, 1888 (eight months from the first operation), I cut down on the nerve and removed the growth which had formed at the original seat of division. A section of this is under the microscope, and you will see that the nerve fibres have

attempted to reunite, but there is evidence of neuritis, and a large excess of interstitial tissue, so that the diameter is quite three times that of a normal median nerve. I removed this swelling, and brought the cut ends of the nerve close together by catgut sutures, and the patient made a good recovery. From the time of recovery the vesicles ceased to appear, the muscles gradually regained their volume, the skin became almost normal, and the sensation returned, so that he can now do everything with that hand excepting detect the difference between a shilling and a sixpence in his bag.

Here, then, is a case which answers in a clear and emphatic way the first of our two questions, and shows not only that nerve lesions can produce effects upon the skin, but also that a lesion of the same peripheral nerve, and in the same place, may be attended by very different symptoms according to whether it is destructive or irritative in its kind. Thus we see, firstly, that during the time the lesion was of a destructive or paralytic nature, it was attended by *smoothness* and shininess of skin, and with *atrophy*; and secondly, that the irritative lesion produced crops of *vesicles* as long as the irritation continued, together with a *wrinkled condition* of the skin in the area of distribution of the nerve. The redness and perspiration which were noticed in both stages, though more in the irritative stage, I take to be due to a loss of the central control over the vaso-motor nerves. Now,

are the symptoms just named confirmed by other cases of paralytic and irritative peripheral nerve lesions respectively?

The next case is one of *hemiatrophy facialis*, a rare condition, and still rarer when dating from an injury, as it does in this case. His name is G. S—, his age 44, and he is a waiter. Fifteen years ago he was running upstairs in a hurry, and struck the top of his head violently against a beam in the ceiling. He fell down, but does not think that he was quite unconscious, though he was "dazed" for a considerable time. He says he had slight pain in the face for a few days after this, but it was very transient, and he had no other symptoms until a couple of years later, when he found that he was gradually losing the hair from the left side of his head and his left eyebrow. You will observe that there is marked loss of the fat from the left orbit, so that the eye is sunken; and of the subcutaneous tissue of the left half of the face. The skin on this side is extremely smooth, thin (it seems about half the thickness of that on the other side), and glossy, but not anæsthetic. There are various theories propounded for accounting for cases of hemiatrophy facialis, but that the condition is due to a destructive lesion of the fifth nerve in this case is evidenced, among other things, by the fact that there is distinct weakness and wasting of the muscles of mastication on the left side (Fig. 1, side view). He suffered from slight neuralgia for a few

days at the outset, but has had no pain ever since, and he has never had any vesicles,—*i. e.* he has throughout only manifested the symptoms of a destructive or paralytic lesion. The facial muscles are unaffected. The special senses and the other cranial nerves are also healthy. The palate and tongue appear normal. His only symptoms, as you can see for yourselves, are atrophy of the subcutaneous tissue and thinning, with a smooth glossy appearance of skin over the left side of the face, with complete loss of hair over the inner two-thirds of the left eyebrow and the anterior third of the left side of the scalp (Figs. 1 and 2).

This, gentlemen, is evidently a *paralytic* lesion of the trunk of the fifth nerve; and see what a marked contrast it presents with the next case that I am going to show you, which is, I believe, an example of an *irritative* lesion of the same nerve. It is that of a woman *æt.* 51, named M. J—, who three years ago was laid up with excruciating pain, which she locates very accurately in the region of the fifth nerve and its branches. I learn on good authority that it was also attended by a copious crop of herpes on the forehead, and severe inflammation of the left eye, which seems to have been of a most destructive nature, for the vitreous and cornea are opaque, and she is quite unable to see with that eye except light from darkness; in a word, she has had panophthalmitis in that eye. She has suffered from severe neuralgia on and off for the three years which have elapsed since then.

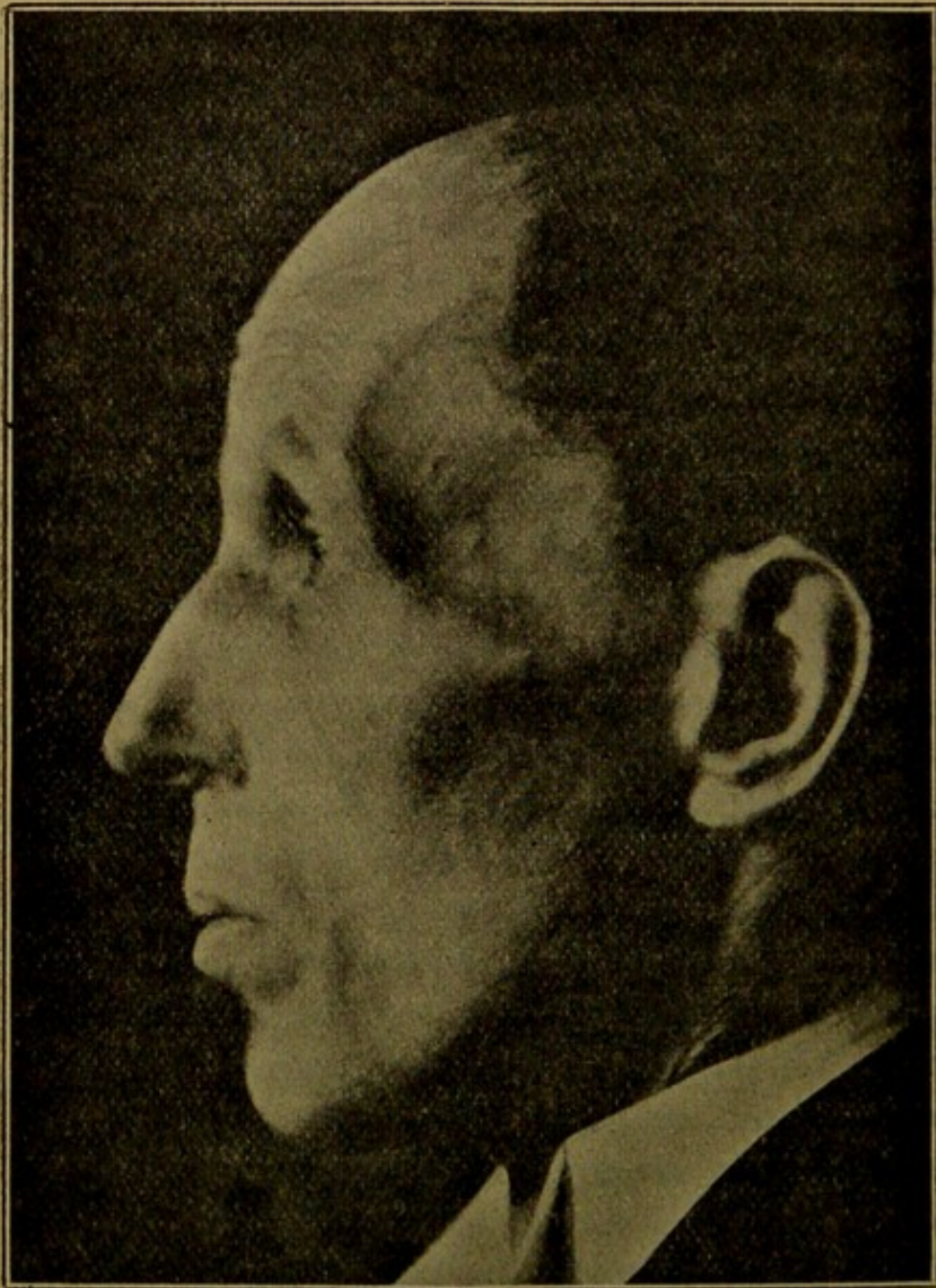


Fig. 1.

Face of G. S—, æt. 44 (hemiatrophy facialis).—The side view shows well the marked atrophy in the position of the temporal and other muscles of mastication. The front view shows the atrophy of the subcutaneous tissue of the left

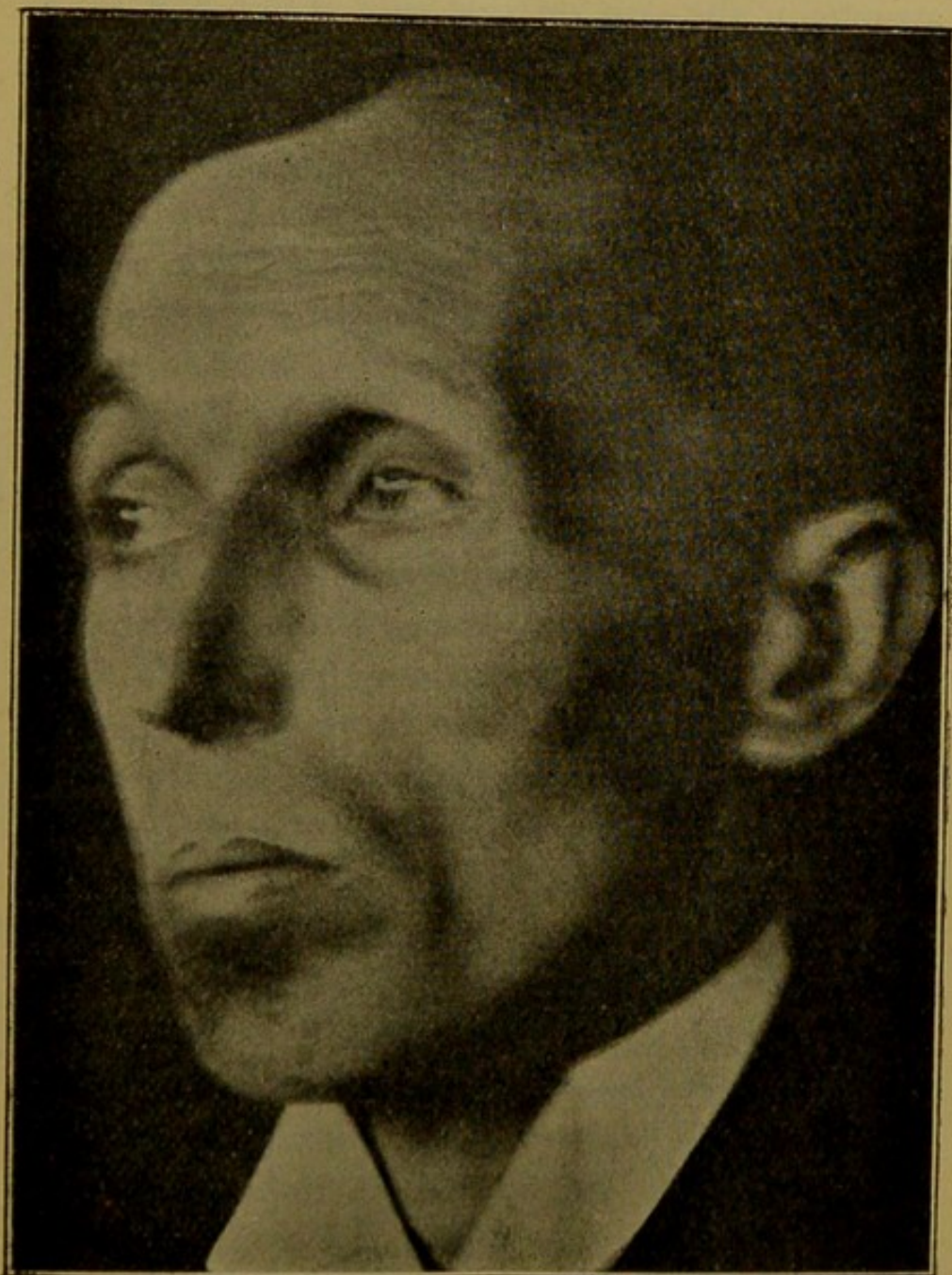


Fig. 2.

side of the face and of the orbit, and also the baldness of the inner two thirds of the left eyebrow, and of the anterior part of the left half of the scalp.

But, gentlemen, you will notice that there is no atrophy of the skin on that side of the face, as in the other case. The skin is slightly red, and rough, which features offer a marked contrast to the atrophy and glossy skin in the other case, due to a *destructive* lesion.

Neuralgia, if it be a gross lesion of a nerve, which some deny,* must be regarded as an irritative lesion. In support of this you will remember that D. F— had no pain as long as the change was simply a destructive or paralytic one, but it was severe during the irritative stage. We are all familiar with cases of neuralgia where some of the hair becomes white and some of it falls out; and you will remember that neuralgia, other than hysterical, is often attended by herpes. But one never sees in these cases the wide-spread atrophy of tissues such as occurs in destructive or paralytic lesions.

Glossy skin has long been attributed to trophic derangements of the nervous system in a general sort of way, but a study of these cases enables us to go two steps further. I could show you many other cases in support of my contentions. They all demonstrate that an actual gross lesion of a peripheral sensory, or mixed, nerve produces, in course of time, skin symptoms of a most pronounced kind; and these differ with the nature of the lesion. A destructive lesion will produce

* Sir W. Gowers, for instance, regards it as a disturbance of the central cells.

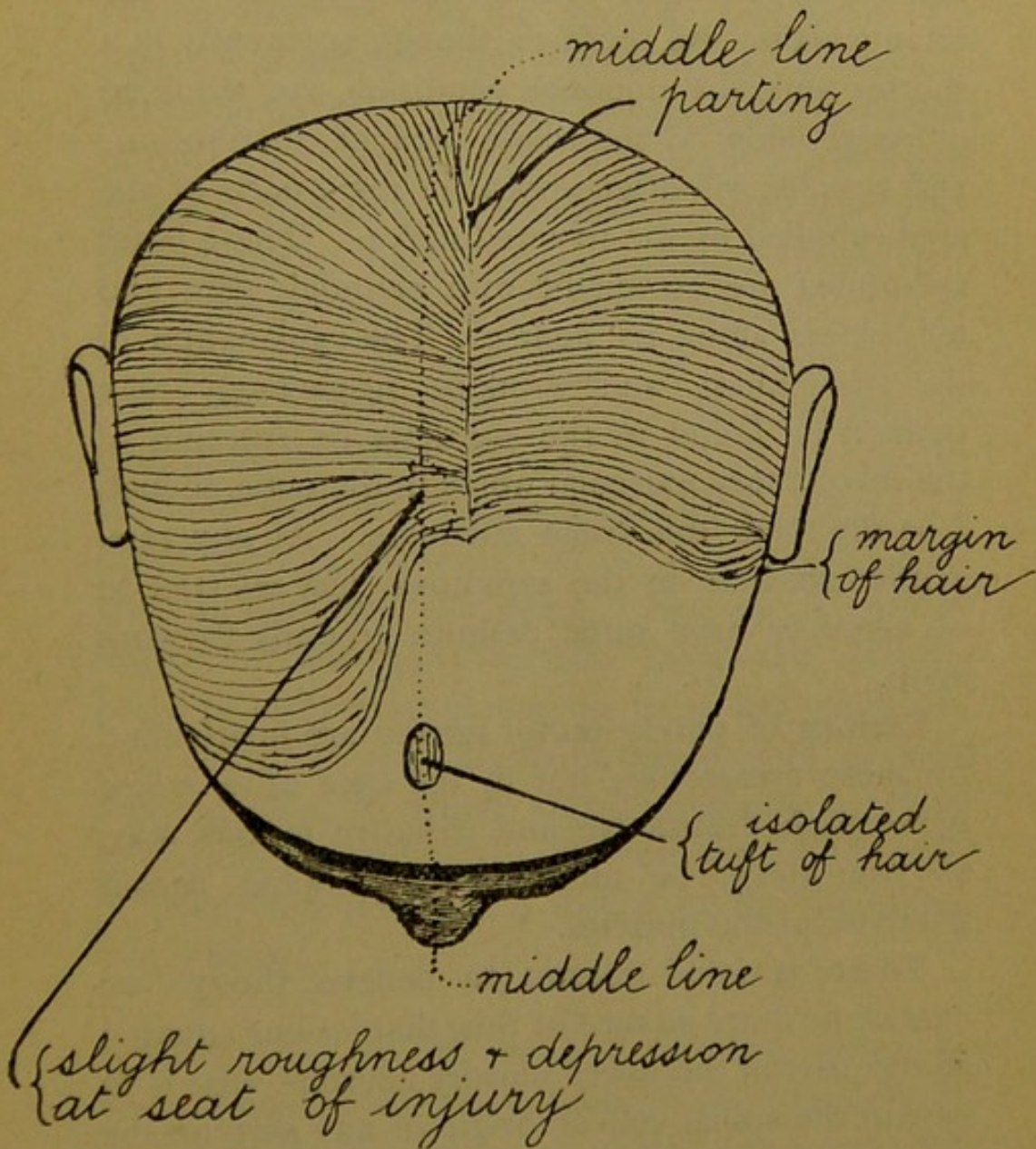


Diagram to further illustrate case of hemiatrophy facialis described on page 6.

glossy skin ; and also, if the lesion be severe and last long enough, extensive atrophy of the skin and its appendages. An irritative lesion in the same position will produce, though apparently in a shorter time, the opposite condition, viz. wrinkled or rough skin in the whole area of distribution ; and vesicles will often appear in some parts of the area supplied by the irritated nerve. These latter symptoms are associated with neuralgic pain and tenderness along its course. The explanation of the smoothness and wrinkles respectively may perhaps be found in the paralysis or irritation of the involuntary muscular fibres in the cutis, though I hardly think this quite adequate. At any rate, gentlemen, here in the symptoms just referred to we certainly have some definite grounds to work upon.

Lesions of purely motor nerves are unattended by these symptoms ; but in the case of a *mixed* nerve both destructive and irritative lesions may, as you know, be attended by atrophic flaccid paralysis of the muscles.

There is good reason to believe, though we cannot be quite so sure of this, that lesions situated in *any* part of the lower sensory neuron—that is to say, in the spinal cell of origin or any part of the course of a nerve—are attended by these same symptoms. There are also some grounds for believing that when an irritative lesion is situated in the spinal ganglion or the posterior horn of grey matter which contains the nerve-cells of origin

(or neuron-bodies) of the sensory nerves, it will give rise to symptoms the same in kind but of greater severity and definiteness than when the lesion is situated in the course of the nerve, *i. e.* in the neuraxon. The perforating ulcers and some of the other trophic lesions that occur in *tabes dorsalis* are probably of this nature. Sherrington's * and Batten's † recent researches have shown that this disease begins in the muscle spindle, which is the peripheral termination or arborisation of the muscle-sense neuron. The marked sensory disturbances which initiate this disorder render it almost certain that the same change affects the other sensory neurons. Now, although it is a general law that the degeneration of a neuron begins at the parts furthest from the neuron-body or cell, nevertheless in time the neuraxon and cell itself are finally involved, and as perforating ulcer is usually a late symptom in *tabes*, it is probably due to the involvement of the cell, or at any rate the sensory fibrils, in the degenerative process.

(b) *Lesions in the central nervous system.*—Passing next to the skin conditions due to lesions of the brain, we have very few facts to go upon, and I have only one case to show you to-day. Under this heading would come the bedsores and trophic lesions which occur on the paralysed side in cases

* 'Journ. of Physiol.,' 1896-7.

† 'Brain,' 1897.

of *hemiplegia*, and it is worthy of note that these skin lesions are more apt to form in cases when the sensation is affected as well as motion, than when motion alone is lost. Under the same heading, too, would be included certain so-called *hysterical manifestations*, of which the "œdème bleu" of Charcot is one, and which I will refer to again if time permit. Cases of various trophic skin lesions, symmetrically distributed, believed to be of an hysterical nature, have been described by Fournier* and others.† The case described by Fournier consisted of a symmetrical vesiculopustular eruption on the forearms and hands; and here is another case which somewhat resembles it, a case full of interest and instruction. Amongst other points of interest the case before you demonstrates, in my belief, the close association which exists between neuro-vascular conditions and

* 'Nouvelle Iconographie,' 1892, p. 202.

† 'Obs. XI de la Thèse d'Athanasio. Des troubles trophiques dans l'hystérie.' Paris, 1890.

Kaposi, "Two Cases of Spontaneous Gangrene of the Skin in Hysterical Subjects." 'Pathologie und Therapie des Hautkrankheiten,' 3^e éd., 1887, p. 378.

Ibid. "Ueber Zoster Gangrænosus Hystericus," 'Vierteljahrschrift für Dermatologie und Syphilis,' 1889, Heft 4.

'Obs. XXX de la Thèse de Leloir,' 1881. Gangrènes multiples de la peau chez une jeune fille de 18 ans.

Sangster, "A Case of Supposed Neurotic Excoriation," 'Medical Congress in London,' 1881, p. 184, vol. iii.

Renaut, "Sur une forme de la gangrène successive et disomnie de la peau," 'La Médecine Moderne,' 20 février, 1890, No. 9, p. 161.

"Strumpell," Simulation. 'Ueber einen Fall von schwerer Selbstbeschaedigung bei einer Hysterischen Deutschen Zeitschrift für Nervenheilk.,' Bd. ii.

trophic skin conditions on the one hand, and with the condition which we call hysteria on the other. It forms the link, so to speak, between two apparently widely different conditions. This young woman, T. M—, is twenty-eight years old, and is an assistant at a large draper's, where her hands are much exposed. She has never had chilblains on her feet, but has been much troubled with them on her hands every winter, from her sixteenth to twenty-fifth year. Since that time, that is for the last three years, she has through every winter been troubled with a different form of eruption on the fingers and backs of both hands. It consists of a constant succession of purulent vesicles. First there appears a small round congested lump, like a chilblain, only more circumscribed and round, and two or three days later a vesicle forms on the top of this (such as you can see on her middle finger), which rapidly becomes purulent; and in the course of the next two or three weeks gradually dries up and the scabs fall off. A constant succession of these lesions appears on the hands, very much like the illustration of Professor Fournier's case, only they are less regularly distributed. They itch a little, but are unattended by pain or subjective sensations. I was carefully removing one of these the other day, without producing the least pain, when a loud rumbling in her abdomen was heard, and she promptly went off into a hysterical faint. When she had recovered, I learned that she was

subject to two or three such attacks a week ; that she had always been very nervous ; and that she also suffered from frequent attacks of typical migraine. These attacks are heralded by flashes of light before the eyes, *pricking and numbness along the ulna borders of the forearms and hands* ; and are followed by nausea, and sometimes vomiting. Migraine is now very generally regarded as a vaso-motor disorder ; and that her vaso-motor system is defective is evidenced, not only by all these symptoms, but by the constant blueness of the nose, on the tip of which, as one of you pointed out to me is a small vesicle with purulent contents like those on the hands. It would seem that we have here a morbid state, which in ordinary people would remain simply as chilblains, but which in this girl has assumed the form of a trophic eruption. It is, if you will pardon so cumbersome a word, an angio-tropho-neurosis. Its symmetry points to a central nerve lesion, but the efferent impulses evidently pass through the sympathetic nervous system—the system which you have often heard me state is, in my belief, primarily deranged in hysteria.

Now, what features do the skin affections, due apparently to functional central nervous derangements, present in common? 1. In all those cases with which I have become acquainted they have been symmetrical and bilateral in their distribution, unless some local determining cause existed. 2. They mostly take the form of some variety of

erythematous or vaso-motor condition, sometimes accompanied by vesicular manifestation, and sometimes, though less commonly, going on to actual necrosis. 3. They are unattended by acute pain, atrophy, or any of the other symptoms referred to under peripheral nerve-lesions ; though they may give rise to pricking, itching, formication, &c., and be attended by those disagreeable somatic sensations which are hard to describe. 4. They are accompanied by other distinctly neurotic or hysterical manifestations of a general kind, and these frequently take the form of vaso-motor disturbances, *e. g.* flushing and shivering, "fainting," and the like. In a word, gentlemen, you will readily gather that it is through the sympathetic system that central, cerebral, lesions of a functional kind affect the skin. It seems very probable that central organic lesions act in a similar manner.

When we come to *diseases of the spinal cord* we have, perhaps, some more definite facts to go upon than in the case of the brain. We know, for instance, that certain cases of syringomyelia may present some very remarkable skin lesions, and my own belief is that that form of *sclerodermia* which affects solely or chiefly the ends of the limbs has an association of this sort. I have a case of that kind under treatment just now. She is a woman of thirty-five, and twelve to eighteen months ago she began to develop a harsh and stretched condition of the skin of the hands and

forearms, feet, and legs. Shortly before that she had developed patches of sclerodermia (morphœa) on the front of the abdomen and chest, over the ends, be it observed, of the intercostal nerves, in the same way as the skin of the hands and feet corresponds to the end of the nerves of the limbs. Lately she has shown some signs associated with syringomyelia, namely, atrophic paralysis of some of the muscles of the limbs. We are in a position of some difficulty here as regards the sensation, which cannot well be tested in sclerodermic skin, and the same as regards the temperature sense, which, as you know, is such a very distinctive feature of syringomyelia, but the sensation for touch is certainly less acute in some parts of her arms and legs than it is in others; whether this is due to the condition of the skin or not I cannot say.

In a case of *syringomyelia* who was under my care in the Paddington Infirmary in 1890, and who died when the gliomatous material reached the medulla, the history of the case was very typical, and we had the opportunity of verifying the diagnosis post mortem. Among other items of the case may be mentioned the fact that two of her fingers were anæsthetic, and the entire skin of these fingers was shed like the fingers of a glove on two occasions.

It is not possible in the present state of our knowledge to differentiate—as regards the skin—with certainty between an irritative and a destructive lesion of either the brain or the spinal cord.

Nevertheless, one would be justified in believing that the differential facts which apply in the case of irritative or paralytic lesions of mixed nerve trunks respectively, would be applicable to corresponding lesions in the cord, for a peripheral nerve contains only part of the lower neuron. The neuron-body (cell), and remainder of the neuraxon, are to be found in the spinal cord.

NOTE.—The neuron has now come to be universally recognised as the anatomical and physiological unit of the nervous system, and is rapidly revolutionising our older conceptions of the nature of many nerve diseases. Some of the principal writers on the subject are the following :

Golgi (C.).—“Recherches sur l'histologie des centres nerveux,” ‘Arch. Ital. de Biologie,’ iii and iv, 1882.

Waldeyer.—“Über einige neuere Forschungen im Gebiete der Anatomie d. Centralnervensystems,” ‘Deutsche med. Woch.,’ 1891.

Cajal (S. Ramon y).—“La fine structure des Centres Nerveux,” ‘Proc. Roy. Soc. Lond.,’ 1894.

Schäfer.—“The Nerve-cell considered as a basis of Neurology,” ‘Brain,’ xvi, 1893, p. 134.

LECTURE II.

GENTLEMEN,—The subject of these lectures is admittedly obscure, and the cases which throw any light on it are rare. However, by the kindness of my friends and colleagues, and the chances of an inexhaustible clinique, I have been able to collect an interesting series of skin cases due to nerve lesions; and you will remember that, in order to introduce some kind of method into our studies, I decided to classify these cases into four groups:—(a) Those skin cases where the nerve lesion is situated *in the course of a peripheral nerve (mixed or sensory)*; (b) those where the lesion is probably situated in the *central nervous system* (brain or cord); (c) those where the lesion is to be found *at the end of a centripetal* or sensory nerve; and (d) those in which the mischief is located in some part of the *sympathetic nervous system*.

I endeavoured to emphasise the fact that the effects which arise in the skin vary considerably according to the nature of the nerve lesion, that is—to say, whether it be irritative or destructive; and we studied together several cases which proved, in a quite remarkable way, that whereas vesicles and rough wrinkled skin arise in consequence of irritative nerve-trunk lesions, glossy skin with atrophy

of the skin and its appendages ensues on paralytic or destructive nerve lesions.

We finished the investigation of those cases belonging to the first two groups, and now we proceed to consider (*c*) skin affections due to *lesions at the end of a centripetal or sensory nerve*.—It is obvious that the effects of a lesion situated at the end of a sensory or centripetal nerve must travel centripetally, and that they will become manifest either centrally (in the form of some subjective sensation, such as itching), or that they will act reflexly, and their effects will be manifest in some distant part of the skin. Lesions situated here, as elsewhere, may be irritative or destructive.

A destructive lesion situated at the end of a sensory or centripetal nerve will necessarily give rise to anæsthesia. It seems highly probable, as I have just mentioned, that in *tabes dorsalis* the lesion begins here in the same way as it begins also in the muscle spindles, that is at the ends of the muscle-sense neurons, and many remarkable perversions of sensation are present in this disease.

Under the head of irritative lesions situated at the end of a sensory nerve, and giving rise to central effects, we have the familiar instance of *pruritus*. I have elsewhere* shown good grounds for the belief that pruritus is always due to a blood alteration, except in those cases when it is second-

* "Pathology of Itching, and its Treatment by Large Doses of Calcium Chloride," 'Lancet,' Aug. 1st, 1896.

ary to an eruption, such as eczema, and then it is due to an inflammatory irritation of the sensory nerve endings. But in cases of simple "pruritus" without eruption, and of "prurigo," it is the toxic condition of the blood in which the peripheral sense-organs lie that gives rise to the sensation of itching.

Here is an elderly man, the subject of that troublesome complaint, *prurigo*, which as you know consists of severe pruritus (itching) *plus* an eruption consisting of three elements,—small, hard, congestive papules nearly always surrounding the hair-follicles; a patchy erythematous condition, which goes on to the changes resembling a bruise, and scratch-marks. Careful investigation always reveals in such cases that there is some disorder of the blood, very generally due to some gastro-intestinal disturbance, or something can nearly always be discovered in operation which renders the blood abnormal. This latter condition must of course be treated, but in most cases I have found that calcium chloride, in large doses, will almost invariably give relief; and since publishing that paper I have received abundant testimony confirming this. But the doses must be large, beginning at 20 grs., and working up to 45, three times a day. This patient has obtained complete relief from 30 grains thrice daily, directly after a meal. Now, calcium chloride has a very marked effect on the blood, and increases its coagulability,* and this is one of many

* Wright, 'Trans. Royal Society,' and elsewhere.

grounds for the belief that pruritus is due to a blood-change. It is much debated in cases of prurigo, which is the primary disorder, the pruritus or the eruption, but there are strong grounds for believing that the itching is the primary, and that the eruption is to a large extent traumatic. The skin and all its structures are doubtless hypersensitive, but it is the rubbing of the patient and the friction of the clothes which certainly produce the scratch marks and erythematous patches and the bruises. Moreover, the rubbing, in my belief, takes most effect upon the hairs, and causes the follicles to rise into papules.

But irritative lesions at the periphery of a centripetal nerve may also be manifest by *reflex effects*, and the case I am about to show you is, I believe, an illustration of this fact. The lady who has kindly come here to-day presents the well-known patches of *chloasma* on the two sides of the forehead and round the eyes. Moreover, although she is only 31, you will observe pronounced *wrinkles* around her eyes and mouth. For some time I was unable to make out the source of these, to her, most objectionable symptoms. But she has a very aggravated condition of granular endometritis, and a small uterine fibroma. The former has recently been treated, and the dark patches on her face have certainly improved since then. She has also another very interesting and rare condition. Her hands, you will observe, are really the hands of an

old washerwoman, though she belongs to the class of fashionable society ; they are extremely *wrinkled and harsh*. Both hands are alike. The disorder, like the chloasma, is symmetrical. It is difficult to account for this condition, except on the supposition that it, like the chloasma, is due to the reflex irritation from the disturbed uterine functions.* Here again, gentlemen, we have a wrinkled condition of the skin in association with an irritative lesion, but this time acting in a reflex manner ; and how is it possible otherwise than through the nervous system ?

In connection with skin conditions due to reflex nerve lesions associated with visceral disease, the researches of Ross, Mackenzie, Thorburn, Head, and others may enable one to identify the position of the originating disease.† These observers have shown, firstly, that the surface of the body may

* The granular endometritis was treated by scraping, and as the uterine functions gradually improved under treatment the chloasma patches disappeared, and the wrinkles on the face and the wrinkled condition of the hands became considerably less, and finally almost entirely disappeared (June, 1897). In October I was again consulted by her for menorrhagia and a return of chloasma and wrinkles. I found that the uterine fibroma had grown considerably, and the endometritis had returned. It will, I fear, become necessary to again call in the aid of my gynæcological colleagues. It ought to be mentioned that she suffers from a very intractable dyspepsia, and that there is a marked history of cancer in the family.

† Ross, 'Diseases of the Nervous System.'

Dr. Henry Head, 'Brain,' 1893, vol. xvi, p. 1.

Dr. James Mackenzie, " " " p. 321.

Dr. Wm. Thorburn, " " " p. 355.

be mapped out into "sensory areas," *i. e.* areas of tenderness, not necessarily corresponding to the distribution of any particular sensory nerve, which lie side by side like the pieces of a puzzle ; secondly, that these areas correspond with the different segments of the cord ; and thirdly, that each of these areas is probably associated in a reflex manner with the different internal organs. So that an irritative lesion of an organ may sometimes be recognised by tenderness situated in some definite area.

Moreover these areas correspond with the different areas affected by patches of herpetic vesicles (a skin lesion which you will remember is associated with irritative direct nerve impulses) in the different varieties of zona. We know how frequently herpetic vesicles around the mouth are associated with catarrhal inflammations of the lungs ; and similarly there can be no doubt that the patches of chloasma in our last patient are associated with uterine disease. Long before these researches, it was known that chloasma in this situation, and across the forehead is a frequent accompaniment of pregnancy in some subjects.*

(d) The last group of diseases with which we have

* I believe pigmentary disturbances to be more intimately associated with toxic conditions of the blood—such as arise in chronic constipation, gastro-intestinal derangements, and germ disorders—than with nerve derangements ; but have purposely avoided reference to this aspect of the matter on the present occasion.

to deal are those cases in which we have reason to suspect some *disorder of the sympathetic nervous system*. These constitute the most difficult, and yet perhaps the most fascinating of all the different varieties. It is chiefly in the vascular disturbances of the skin (vaso-motor conditions, or angioneuroses) that lesions of the sympathetic system become manifest. The sympathetic system possibly conducts trophic influences to the skin, a subject which was briefly referred to under central nerve lesions, in connection with the interesting case of T. M—. However, in this place we must confine our attention to the vascular changes. As you are aware, physiologists state that every peripheral nerve contains different vaso-motor fibres which have opposite effects, vaso-constrictors and vasodilators, the former being the most numerous and powerful; so that when a nerve is cut the vessels of a limb dilate, and if the distal end be stimulated electrically the vessels contract.

Raynaud's disease, acroparæsthesia, fugitive erythema, other kinds of erythema, and giant urticaria are some of the affections belonging to the group under consideration, and I propose to briefly study some of these cases with you.

This patient, who is suffering from *Raynaud's disease*, is now 25 years of age. She was under the care of Dr. Fletcher Little in the Temperance Hospital, and was exhibited by him at the Clinical Society. She is of a somewhat nervous temperament, and complains of pain in her hands, which,

she says, is of a burning and fiery nature. She never noticed anything wrong until her eighteenth year, when she began to suffer greatly, she states, from attacks of coldness in her fingers and toes, which at times became very white as far up as the second phalanx. Both her index fingers were at first specially involved, but by-and-bye the other fingers were affected. I want you to particularly bear in mind that they were white, not red, for at that time these attacks of angiospasm were not succeeded by the reactionary dilatation ; these attacks she ascribed to her occupation, which was that of florist's apprentice. In the course of the next two years her symptoms gradually got worse, and they extended to all the other fingers of both hands, excepting the little fingers. All the phalanges of the affected fingers became very much worse on the slightest exposure to cold, and now, at the conclusion of the attacks, they assumed a dark purple colour. At the age of twenty-one her fingers had become so bad that she had to give up her work ; and it was at this time she noticed, one day, that two black spots had formed, one at the tip of each index finger. These finger-tips "ulcerated and fell off," and the wounds were very slow to heal. The thumbs and other fingers, with the exception of the little fingers, subsequently became involved in a similar way, the corresponding digits of the right and left hands being affected simultaneously. During this process she had a good deal of pain, and

she says that the points of her fingers felt as if they were "on fire." When the ulcerated points healed there was considerable loss of tissue; and now, you will observe, the affected digits are much shortened, and the nails are very small. There have never been any similar lesions on the feet, but they have always been subject to the same attacks of coldness. She has suffered from time to time from erythematous blotches on the arms, and at the present time there are small bruise-like patches on both legs. She has lost flesh, but lately she thinks her hands have got a little better. You will notice little purple patches on the face, which are very apt to appear in these cases. Another condition present in this case, which is not unusual, is the smooth and stretched appearance of the skin.

The entire integument of the body and limbs is dry and harsh, is scurfy and cracked in places, and is atrophic—a condition not infrequently associated with Raynaud's disease. The skin of the face appears stretched and shiny.

This, gentlemen, is a very typical case of Raynaud's disease. The symptoms which belong to this disease are six in number: first, a general emotional and nervous condition; secondly, the local condition of the extremities,—*i. e.* attacks of pallor followed by a purple condition, and this by sloughing and gangrene; thirdly, crops of livid erythematous patches on different parts of the body, such as those you see. There may also be,

fourthly, paroxysmal hæmatinuria ; fifthly, attacks of intermittent pyrexia ; and sixthly, in some cases, effusion into the joints. This patient has had the first three ; she may have had the fifth, but not the fourth, nor has she had actual hysterical seizures, though she is highly nervous. Consider, gentlemen, for one moment what strong points of resemblance these cases have to those cases alluded to under central nerve lesions which take effect through the sympathetic system !

The next case I will show you is a woman the subject of *acroparæsthesia*, a milder disease, but certainly allied very closely to Raynaud's disease. Acroparæsthesia is a very appropriate name for what I believe to be a fairly common condition, though it is not described in the usual text-books. At the present time I have ten or eleven cases under my care at the Nerve Hospital. When occurring only in slight degree such cases are often overlooked. This patient's age is 52, and for nearly eighteen months she has had attacks (at first seldom, but more frequent latterly) commencing with pins and needles in the fingers, going on to acute pain of a burning character, accompanied by redness and swelling of the hands, completely preventing sleep, and attended by so much swelling that she could not close her hands. At first the attacks only came on at night, and she had intervals of freedom, but recently her hands have been almost continuously bad. She is extremely emotional, and trembles all over at the slightest excitement, though the climacteric occurred three years ago.

This disease has the following characteristics. Its principal manifestation consists of attacks of coldness and pins and needles in the extremities, with other curious and indescribable sensations in the hands, and less frequently in the feet. Sometimes these attacks are brought on by exposure to cold, and very often at night-time when the circulation is normally less active, and the patient happens to put the hands out of bed. The attacks consist at first of a very transient stage of pallor, due apparently to spasm of the vessels, followed immediately by dilatation and congestion of the parts, of a more lasting character. The stage of pallor may be so brief as to be overlooked, but the whole attack lasts from a few minutes to a few hours. I am showing you the most exaggerated case I have, where at one time the attacks lasted for twenty-four or forty-eight hours at a time, and the patient was laid up for two months. I have several others with slighter manifestations. All are females with one exception, and all but three are by occupation seamstresses. The patient before you does a lot of household washing, which makes her hands worse. All have derived considerable relief from nux vomica, combined with bromide of ammonia, or galvanism.

The next case I want to show you is an example of that extremely rare condition, *giant urticaria*, or Quincke's disease. This patient, who is 34 years of age, was suddenly seized five years ago with an irritation of the front of the abdomen,

accompanied by what she describes as "small white lumps in clusters, about the size of peas." These subsided, but they have recurred, and latterly she never passes a day without an attack on some part of the body. They come on apparently without cause. Quinine, arsenic, and other things failed, but she has obtained some relief from hydronaphthol ointment. She is under the care of my colleague, Dr. Eddowes, who has very kindly sent her here to-day. The eruption is very fugitive, coming in attacks which last at most for a few hours, and then disappear spontaneously, but fortunately you are able to see some of the lumps. You will see some œdematous whitish or pinkish swellings on the inner surface of the arm. On the face also are some blotches, and the feel of those on the forehead is very characteristic. They occur on any part of the body, face, or extremities; and not only on the skin, but also on the mucous membranes, and in that position they may give rise to a good deal of danger by swelling around the glottis.

The disease belongs to the group urticaria, and like that condition is generally associated with gastric disturbance. Severe vomiting and diarrhœa are sometimes present also, and it is possible that these are due to the same lesions occurring in the intestinal canal as you see on the skin.

There are a large number of vaso-motor phenomena, of which I might have shown you many illustrations to-day, but I must content myself

with two cases of *fugitive erythema* and one of *hyperidrosis*.

This patient is the subject of fugitive erythema, which attacks her across the front of the face. "Fugitive facial erythema" is a disease consisting of attacks of congestion situated most usually on the nose and across the face in a "bat's-wing distribution," and seems to be really a preliminary stage of rosacea. Sometimes, when the disease progresses, and becomes permanent, it passes into a condition indistinguishable from rosacea. One of my patients, a girl of 16, has erythematous blotches on the arms and legs during the attacks of facial erythema. I show you this particular case to-day because it illustrates the value of calcium chloride in large doses, which I have found very useful in such cases. I began to try this remedy in August of last year, and have used it altogether in seven cases of fugitive erythema and three cases of rosacea. It certainly relieves both conditions while the patient is under the treatment. How far the relief is permanent it would be premature to decide, but in three cases there was no return, after ceasing the remedy gradually (as should always be done), for some months. This patient has taken 20, gradually increased to 25 grains three times a day directly after meals (another necessary precaution). Larger doses than these have not been required, though the remedy may be increased to 40 or 50 grains four times a day.

Besides calcium chloride, bromide is nearly always indicated, and gives great relief from the nerve symptoms.

She has only had one attack during the last fortnight, whereas they appeared nearly every day before. These attacks are worse after meals, and worse at the catamenial periods; nearly all erythemata have these tendencies. The disease is almost entirely confined to females, either at the evolution or involution of the sexual functions, showing that there is a large nerve element in these cases, though, on the other hand, the relief by calcium chloride indicates some blood alteration. Moreover, these patients nearly always show other signs of nerve disturbance in the shape of attacks of tremors, faints, "nervousness," and so on.

The flushes which patients so often complain of at the menopause belong to the same category as the erythemata under consideration.

All of the foregoing are vaso-motor disturbances of a more or less general character, but I should like to show you one case which is apparently due to a localised lesion of the sympathetic nervous system, viz. the cervical ganglia.

The patient is 29 years of age, and he suffers from a most curious malady. For the last four or five years he has had attacks (which came on occasionally at first, but lately have been very frequent) of *perspiration confined to the left side of the face*. At first they only came on when he took pepper or spicy things, but latterly when

he is looked at or gets nervous he gets flushed, and the perspiration comes on. It never affects the right side, and perspiration is sometimes so profuse that it collects beneath the eye, and drops down the face. The left side of the face is a little more puffy than the right side. That these curious symptoms are due to some disorder of the cervical sympathetic is evident, and it is probably of an irritative kind, but the cause and nature of the lesion are very obscure.

Belonging to the same category as the erythemata we have been considering, there is also a very interesting series of cases which were published by Dr. Bolton Tomson, of congestion and various other angioneuroses.* I would also refer you to the writings of Charcot, on the *œdème bleu* which occurs in hysterical subjects,† and others.

Let us, in concluding this subject, consider for a moment the *features which the various "vaso-motor cases" we have been examining possess in common.* In the first place, in all of the symptoms, no matter of what kind they may be—erythema, pallor, flushing, congestion, hæmatinuria, &c.,—all are paroxysmal; they come on in attacks of shorter or longer duration, and pass away only to return again after an interval of varying duration. Now you will observe that this periodicity is a characteristic of the contraction of involuntary muscular tissue. I do not think that

* 'Lancet,' Aug. 15th, 1892.

† 'Leçons sur les maladies du Système Nerveux.'

this rhythmical or periodic character of involuntary muscular action is sufficiently realised. The peristalsis of the intestinal canal, and the uterine contractions, reveal this character; and the same spontaneous periodic contraction and dilatation of the arterioles may be observed in animals. This periodic character of the symptoms in certain diseases helps us sometimes to identify the kind of disorder with which we have to deal. It shows us also that we have to do with a defective function in the middle coat of the vessels, either in the direction of excess or diminution; and, the function of this tissue being controlled by the sympathetic nervous system, it is here we must look for the defect, or in the central nervous system which controls it.

The *second* feature they all have in common—or all but the last case—is symmetry of distribution. This seems to point to the fact that the disturbance, whatever it may be, is centrally situated; that is, is in the brain or cord, inasmuch as the sympathetic ganglia are found in pairs,—one set for each side of the body.

A *third* feature is that each attack consists of a first stage of pallor, though often so brief and transient as to be unnoticed by the patient, which corresponds to contraction of the arterioles, followed by a second and longer stage of dilatation. Moreover, this latter stage is accompanied, strange to say, not by an increased flow of blood through the part, as usually happens when the arterioles

dilate, but by a blood-stasis, and often increased transudation even of red blood-cells, which leave the stains as of a bruise. I confess that this blood-stasis puzzles me not a little, but there is the fact. In cases where the first stage of angio-spasm is very marked, as in Raynaud's disease, gangrene of the parts may ensue. The pains, burning and tingling, and other subjective symptoms which accompany these attacks, are possibly due to the pressure on the sensory nerve endings by the dilated vessels, or in the first stage to the actual coldness of the bloodless tissues.

Fourthly, the symptoms always have a marked tendency to affect exposed parts, such as the face and hands, and the parts at the extremities of the limbs, such as the feet. The attacks are, moreover, in the early phases always determined by cold. These features are readily explained by the mechanism of the circulation, and the vaso-motor susceptibility to cold. Raynaud's disease is nothing more nor less than an exaggerated sensibility to cold; and you will notice that in cases of Raynaud's disease the feet, which are covered, are always less affected than the hands.

Fifthly, females are far more often attacked than males by these disorders; and they almost invariably exhibit signs of general nervous irritability, such as those which have been mentioned. This, again, points to a disturbance of the central nervous system—the brain or cord,—and, moreover, that the disturbance is of an irritative

kind, and of a kind we call functional, because with the present means at our disposal we cannot identify any gross lesion.

It is not possible on this occasion to draw analogies between these various vaso-motor conditions and the cases alluded to under *central nerve lesions* (b).

Time presses, and I must leave many interesting topics for a future occasion; but in conclusion we must briefly consider the general principles which should guide us in the *treatment* of these cases. And first, whether the lesion be situated in a nerve trunk or the brain or the sympathetic system, provided it be of an irritative nature, I cannot too much insist on the value of complete *rest* and complete cessation of function. Long ago this was insisted upon by Hilton in that classical work of his, 'Rest and Pain,' and it certainly has a more marked effect than any other method that I know of. In the case of the first patient I showed you, absolute rest—absolute rest in a splint for many months—was of the greatest use for the pain, which came on when he first used his arm, owing to the tension between the ends of the nerve. For cases of neuralgia it is also invaluable, and I have in this way cured several cases which have baffled many other plans. Sometimes it may with advantage be combined with over-feeding and massage—and this has already done the lady with chloasma some good,—but complete rest

alone is a sovereign remedy for all irritative states of the nervous system. Bromides and other sedative remedies are useful to promote this end by increasing sleep and calm.

We have seen that *vesicles* may be regarded as indicating an irritative lesion of the lower neuron, and here again rest is of value. For the neuralgia which accompanies herpetic affections complete rest, and bringing the patient completely under full doses of bromide, is one of the best plans. Quinine in big doses is sometimes useful, and galvanism has been tried, but I have rarely found it beneficial. For the vesicles themselves nothing can be done but painting with collodion.

For *reflex cases* in which the cause is some reflex source of irritation, of course, this must be removed before one can hope to cure the chloasma, wrinkles, wasting of the subcutaneous tissue, and so forth.

For *pruritus*, calcium chloride is, as previously mentioned, a valuable remedy, whether the itching is secondary to a skin lesion, or whether it is primary. Warm baths, especially warm tar baths are useful adjuvants.* Administered at night, they often procure a good night's rest.

Then we come to the *vascular lesions*, for which a good deal can be done, excepting, perhaps, in Raynaud's disease, when the disease is fully established. Nux vomica and quinine are the

* A small teaspoonful of creolin to 15 gallons of water at a temperature of 98° F.

best tonics I know, and I use the word tonic here in the appropriate sense that it gives tone to the vessels. There is no doubt that where there is dilatation of the vessels, indeed, in all congestive disorders of the skin, quinine in large doses is often of great service, and so is nux vomica. The latter is *par excellence* the remedy which gives tone to the involuntary muscular fibres, and it is of the greatest use in cases of acroparæsthesia. It may advantageously be combined with bromide of ammonium for the general nervous irritability in these cases.

Of course one must correct any fault there may be in the blood. In urticaria, for instance, you know it is necessary to clear out the intestinal canal with magnesium sulphate or some other saline purge.

When there is mainly *contraction* of the vessels I believe galvanism is a very valuable remedy. I have not had very great experience of this remedy in vascular disorders, but in those I have tried it, where the patient will come up regularly, and a current of sufficient strength be applied sufficiently often, galvanism has been the means of giving complete and often permanent relief. For instance, in cases of "dead hands," which I have not had time to mention to you. This symptom arises in persons apparently in perfect health; the hands go perfectly white and cold without the slightest reason, and even in hot weather. I have relieved two such cases by galvanism down the

forearms for a quarter of an hour daily, using large rheophores and the strongest current possible.

In Raynaud's disease I believe, inferentially, this same line of treatment might be successful, especially for cases seen in an early stage. In acroparæsthesia, which has so many points of resemblance to Raynaud's disease, I found in three cases that the condition by two weeks' steady treatment was entirely relieved. There is another form of electricity which I believe would be worth a trial in Raynaud's disease, viz. static electricity. I have known it produce certainly marvellous relief in some cases of vascular spasm, and I should certainly recommend its use in the other, more formidable, affection.

The whole subject of dermato-neurosis is admittedly obscure, and I have really only touched the fringe of it to-day. Many more interesting topics have not even been referred to, such as the pigmentation or leucodermia associated with tabes dorsalis and neuralgia, and the distribution of the skin affection in certain cases of morphœa nigra and alba. These must be deferred. It has, however, been my aim to avoid, on the one hand, laying before you any misleading hypotheses or high-flown theories; but, on the other, to give you some definite facts, which will, I trust, enable you to draw practical lessons for yourselves.

