

Kirchoff, be granted, the same explanation may be given of the five or six cases in which the lesions were unilateral. On this supposition the symmetrical muscles, which, as a rule, act simultaneously, (tongue, larynx, &c.) will be represented by centres in each of the two hemispheres, but normally only the crossed fibres will be in use. When one of the hemispheres is injured, the other may supply its place, and complete conduction takes place. But if one of the hemispheres, by some anomaly of its structure, or by an acquired habit (as takes place with language), is alone able to act, then its lesion will, of necessity, bring about loss of function.

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Syringomyelia and Morvan's Disease.

I.—*Paresis and Analgesia of the Upper Extremities associated with Whitlows. Paresi-analgesia*¹ *of the Upper Extremities or Morvan's Disease.* A review by F. Verchère (*Revue des Sciences Médicales*).

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Morvan's whitlow was first described in 1883. It attracted a great deal of attention and was much discussed by surgeons, to whose province it was thought to belong. All agreed as to its importance, and its discovery was hailed as that of an entirely new and distinct disease.

It was not till 1888 that the current of opinion was turned into a new channel. This was the result of a decisive autopsy in which the typical features of Morvan's disease were found to be associated with the lesions of syringomyelia. From that date Morvan's whitlow passed from the sphere of surgery to that of medicine. It was impossible to resist the conclusion based as yet on a single, but crucial, observation. Further evidence, had any been needed, was quickly forthcoming to settle on a secure basis its true position in nosology. It may now perhaps be asserted that this has been done. Morvan's discovery, deprived of its independent consequence, has gone to swell the significance of a train of symptoms concerning which our knowledge is steadily growing, and which already surpasses in interest and complexity the earlier acquisitions of neurology. In thus deciding, however, there is danger that we prejudge the question. Besides that, M. Morvan himself resolutely rejects the new pathology, there

has been in another quarter a determined effort to reopen the discussion. It had long been recognised that certain forms of syringomyelia, and amongst them those that conformed most closely to the type of Morvan's disease, bore a strong resemblance to anæsthetic leprosy. A difficulty originating in this source was foreseen rather than experienced when Professor Charcot undertook to lay down the principles of a differential diagnosis. The immediate result was a fresh controversy, in which it was maintained by the new disputants that the grounds of such a diagnosis were insufficient, and that, in fact, there were adequate reasons to postulate the identity of the two diseases. *Adhoc sub judice lis est*, and the event may prove that Morvan's disease has not yet seen its final vicissitude, and that it is destined to be handed over to the dermatologist, who claims it as a variety of a contagious parasitic disease.

Under these circumstances it behoves the reviewer to maintain an impartial attitude; to abstain from undue criticism and content himself with noticing the more important contributions and stating the arguments adduced for the successive transfers of this remarkable malady from one department of medical science to another.

It will be seen from what we have said that the history of the disease is divided into three periods, corresponding to three different phases of opinion, and the literature of the subject is similarly marked out. The dates are determined in each case by the suggestive research or the epoch-making treatise, which has given a new turn to thought or shattered former convictions.

The three phases or periods may be arranged as follows :

I.—*Period of clinical surgery.* Morvan's whitlow. A morbid entity having an external cause. Account of the characteristic symptoms of such morbid entity, 1883-1888.

II.—*Period of pathological anatomy.* A medical incident. Association with syringomyelia. Account of syringomyelia (Type Morvan), 1888-91.

III.—*Dermatological period.* Anæsthetic leprosy and syringomyelia, 1891.

First Period.—Clinical. A surgical disease. Morbid entity having an external cause. Account of the symptoms belonging to such morbid entity, 1883-1888.

The first period begins with the original description of the disease. In 1883 Dr. Morvan, of Lannilis, published in the *Gazette Hebdomadaire* his observations in seven cases of an affection which he defined as "paresis and analgesia of the upper

extremities, associated with whitlow," otherwise "paresi-analgesia of the upper extremities." These observations are a model of accuracy and acumen. It is but just to record that amongst the voluminous contributions to the subject which have since appeared, not one has had to correct or to amend a single statement of those made by Dr. Morvan in the first instance. It was inevitable that ampler experience should find some details to add, and the event has proved that a place in the family of diseases, not then foreseen, awaited the new discovery; but from first to last Morvan's description remains the unembellished counterpart of the symptoms to which he gave the name of paresi-analgesia. These symptoms are summed up in three words—paresis, analgesia, and whitlow. They are the same now as they were at first. Taking each of these symptoms separately, we shall enquire what are their characters and in what way they are subject to modification in different patients.

Analgesia extends to all the modes of sensation, but it varies in its distribution in a manner often corresponding to the stage of advancement which the disease has reached. Where there has been only one whitlow the analgesia, as a rule, is limited; but where, on the other hand, these have successively formed during a period, perhaps, of many years, and when the skin is thickened and chapped there is apt to be complete analgesia, involving the whole of one or both upper extremities; more rarely the lower limbs and the face and trunk are similarly affected. Even in such cases, however, the condition is not absolute, some portions of the surface within the affected area retaining their sensibility to pain. And it is to be observed that the patches in which sensibility persists are not disseminated.

Analgesia proceeds in a uniform manner and implicates entire segments together. It is most extensive on the side first attacked, the hand, fore-arm and arm, perhaps, being absolutely involved; while, on the other side, a more limited area, as the hand and fore-arm only may be affected.

To analgesia are frequently added other derangements of sensation; insensibility to touch or to temperature may be also present. The dissociation of the different modes of sensation are common, but not invariable. Its occasional manifestation is a fact of great importance, and it will be seen that it has been made the basis of remarkable inferences by writers in the second period of the history of paresi-analgesia. Neuralgic crises of the affected limb are also observed. These crises take place at first at uncertain intervals, and finally cease when the disease is

fully established. Morvan, writing in 1883, says, "Paralysis of muscles in the fore-arm and hand is constantly present, and this is accompanied by atrophy. Paralysis and atrophy are of variable extent. They may occupy the entire limb, but as a rule they are confined to the part below the elbow." Subsequent observations have not confirmed this statement. Paresis was absent in the cases reported by Guillot and Broca, and in those which came under Morvan's own notice at a later date (1886). Paralysis, when it occurs, is not limited to voluntary movement, but may also be demonstrated by electrical excitation. Morvan observed that the muscles responded badly to faradic currents. Neither, however, is this invariable, and Hanot and Ogier de Spéville have found faradic contractility unimpaired. The reflexes are subject to great variety. The olecranon and patellar reactions are sometimes abolished; in other cases retained or exaggerated. The formation of whitlows is the essential characteristic of Morvan's disease. It is occasionally the earliest lesion. Sometimes it is preceded by neuralgic pains, with a sensation of weight in the threatened limb, and it may be that analgesia has previously existed for a considerable time, so that the patient inadvertently burns himself before it is found out. In many cases, however, whitlow is the first symptom. It has all the appearances of the ordinary inflammation, but without the pain, and when it has been decided to make an incision the operation is borne with complete indifference. There is no pain complained of, and the part heals readily as a rule, but usually with the loss of a phalanx. In fact, the bone is in most cases necrosed, though the process is slow and painless, with nothing to mark its character. No sooner is the first whitlow removed and the finger healed than another begins to form, and this in its turn is followed by many more. The different fingers are successively attacked, each after an interval of uncertain length. The sufferers witness their hands becoming progressively deformed, their fingers, so to speak, dropping off one after another. The unfortunate patient, who is without independent means, "is rendered unable to work; compelled at first to supply his hunger by the means of some precarious occupation, he is driven sooner or later to seek support at the public expense" (Charcot).

The upper limbs are not alone subject to mutilation. The same process may fix upon the feet and produce a similar deformity of the toes. Perforating lesions take place, and life may be prolonged for many years, while the patient is incapacitated and under the constant apprehension of renewed attacks.

Such is a broad outline of the characteristic symptoms of Morvan's disease. This description has been taken for the most part from an excellent work by M. Ogier de Spéville, which in a sense marks the climax in the history of that affection.

It is necessary, however, to bestow some attention on points which have been elicited by subsequent observations. Amongst these are sensory derangements, such as impairment of sight and of hearing, loss of taste and smell, and affections of sensation involving the head and face. A joint affection of the character of a dry arthritis may take place. This was first shown by Prouff, and afterwards confirmed in his cases by Morvan. The latter has also observed a double fracture in the lower third of the fore-arm, caused by moderate exertion.

Finally, Auguste Broca and Morvan have directed attention to the frequent occurrence of scoliosis in connection with paresi-algesia. Of twelve patients six furnished instances of the deformity. Its significance has been much discussed. The main question is as to whether scoliosis should be regarded as the cause or as the consequence of the nerve lesions. The monographs of Morvan, Prouff, Broca, and a chapter in de Spéville's work are devoted to the controversy. Morvan, quoted by de Spéville, maintains (1) that Broca and Prouff were misled in supposing that curvature of the spine is antecedent to paresi-algesia; (2) other affections of the central nervous organs are not accompanied by scoliosis, and this is a circumstance of considerable weight. "As to the first of these statements," observes Ogier de Spéville, "the matter in dispute is of little consequence, and we have no hesitation in hazarding the opinion that the cases from which Morvan, on the one hand, and Broca and Prouff, on the other, draw their conclusions, were not comparable. In the latter, where the subjects were young persons of thirteen or fourteen years and where the curvature had its convexity to the right in the upper part of the dorsal region, it was undoubtedly of the usual adolescent character. Here it seems impossible that syringo-myelia could have preceded the deformity. On the other hand the order favoured by Morvan is much the more probable, in view of the facts reported by him."

With reference to the second of Morvan's positions, that in which he attributes a secondary spinal curvature to paresi-algesia alone of nervous disorders, it is not in accordance with facts. Pitres (of Bordeaux) and Kœnig have established its existence as a result of locomotor ataxy, and Pierre Marie has met with remarkable instances in the disease, to which he has given the name of *acromegaly*.

We have dwelt at some length upon this point because the spinal deformity has played a conspicuous part in the history of Morvan's disease. To complete the tale of symptoms it remains to mention that besides the chaps and fissures of the skin covering the extremities there is a liability to deep ulceration, which may give rise to abscess in the sheaths of the tendons, and which has been compared to perforating ulcer of the palm. The hands may be the seat of a pustular eruption, their temperature is often considerably lowered; they assume a livid purple colour, and with the fingers deprived of their nails, mutilated and deformed, the whole member presents a grotesque and pitiable appearance. The disease runs a long and irregular course, and may be in progress for ten, fifteen, or twenty years. In Prouff's case there was an interval of twenty years between two consecutive whitlows.

At this period the pathology of the disease was a source of perplexity. There was little to be learnt from its apparent causation. Though it occurred most frequently after forty, it might appear at any age from twelve to sixty. Males were attacked more frequently than females in the proportion of thirty to twenty (Ogier de Spéville). This may be accounted for by the fact that the starting point of the original lesions were attributable to external causes, injury or frost-bite (Morvan, Czerny) though it was also traceable to a previous illness, such as smallpox, measles, malarial and typhoid fevers. Finally, in the case of a dyer whose hands were habitually immersed in irritating fluids, localised toxic symptoms were observed.

A knowledge of these circumstances was calculated to throw little light on the matter. In addition there was the result of a single autopsy conducted by Gombault and Reboul on the subject of Prouff's case. These observers found extensive changes in the peripheral nerves. The fibres were destitute of myelin, and they further exhibited a considerable thickening of the areolar investments and endoneurium—in short, all the evidence of a pronounced neuritis affecting both the nerve structure proper and its interstitial elements. They therefore determined in favour of a peripheral origin, and came to the conclusion that the essence of the disease was a trophic disturbance associated with neuritis. There was still room to speculate as to its causation. A theory was suggested by the comparative frequency with which cases were met with in the district where Morvan and Prouff practised, and the disease was attributed to endemic influence. This hypothesis was revived in 1890 by Déjerine and Tulauc. "The

affection," they said, "is undoubtedly local in its incidence, and the proof is that M. Morvan has encountered twenty cases within the two cantons where he practises. Pending more certain information the analgesic whitlow must be regarded as a peripheral neuritis of a toxic or infectious character, and depending upon a cause as yet undiscovered." Gombault and Reboul had previously entertained the notion that the neuritis might have its cause in a specific contagion derived from fish. In this way the ground was prepared for an association of Morvan's disease with leprosy.

This hypothesis of a peripheral neuritis, however, having held the field for a brief space was destined to be again disposed of. Thibierge, in his remarkable work on disorders of the skin in syringomyelia, observes that the importance of peripheral nerve changes needs to be discounted. They are met with in so many and such different connections that their pathological value is open to question. Gombault's communication to the Société Anatomique (July 25th, 1890), Brissaud's to the Société de Biologie (July 25th); and a valuable critique by Babinski (*Gaz. Hebdom.*, 1890, pp. 374, 383), go to prove how guarded should be the interpretation of peripheral lesions. These considerations were fatal to the provisional pathology of Morvan's disease.

It was reserved for new discoveries to carry conviction and to remove ill-founded prejudices. The revolution was not long pending, and in 1887 it was accomplished. From that year dates the second epoch in the history of paresi-analgesia.

Second Period.—Period of pathological anatomy. Morvan's whitlow a medical incident. Association with syringomyelia. Account of syringomyelia (Type Morvan), 1888-1891.

The first attacks upon the individuality of Morvan's disease were the result of pathological investigation. Reference has been made to the observations of Monod and Reboul, and the consequent attempts to account for the symptoms by changes in the peripheral nerves, such as were to be seen in the digital branches of the amputated fingers. Soon after similar lesions were observed by Gombault and Reboul in the autopsy which they performed on Prouff's case, with the addition, however, of other changes in the spinal cord. Unfortunately the existence of extreme spinal curvature had interfered with the success of the examination by rendering the extraction of the cord very difficult. The changes which it exhibited were confined almost entirely to the cervical enlargement. They consisted of an increase in the connective tissue of the posterior columns and

posterior horns of the grey matter, with thickening of the vascular walls. Similar appearances were to be detected in the lumbar region. "The central lesions were, on the whole, much less considerable than those of the peripheral nerves." The latter were restricted to the upper extremities. Gombault and Reboul are not disposed to admit that the loss of substance in this case corresponds to the cavities of syringomyelia, but "there can be no doubt that the lacunæ bear a remarkable resemblance to those which are often seen in the cavities in question; neither is it unreasonable to suppose that the walls of such a cavity may give way under pressure, and subsequently come together with the approximation of surrounding masses of nerve tissue" (Louazel).

From this time forward the relation of Morvan's disease to syringomyelia was warmly discussed. The researches of Roth (of Moscow), of Charcot, and finally of Joffroy and Achard, led ultimately to general acceptance of the view that Morvan's disease and syringomyelia were one and the same thing, and the former came to be regarded as a variety or type (Type Morvan) of the more comprehensive disorder.

On January 31st, 1890, Joffroy made a *post mortem* examination at the Salpêtrière on the body of a woman who had suffered from Morvan's whitlow, with all the characteristic symptoms belonging to it. The examination of the spinal cord was conducted under the most favourable circumstances, the absence of curvature allowing of its easy removal. There was at length an opportunity of settling the vexed question of pathology.

The existence of syringomyelia was demonstrated beyond the possibility of doubt. A cavity was found extending from the lower limit of the medulla oblongata to the mid-dorsal region, displacing a large tract of the grey matter, and the posterior columns were destroyed for a considerable distance. There was, further, a glioma of the dorsal portion of the cord, and with these peripheral neuritis of the radial and the median. "Thus was established incontrovertibly the interesting, fact till then in dispute, that syringomyelia may give rise to the clinical symptoms of Morvan's disease" (Louazel).

It may be mentioned here that Joffroy has quite recently had a case in which the *post mortem* appearances fully corroborated his earlier observation, and proved no less clearly that Morvan's disease is only a clinical manifestation of syringomyelia. In this way the pathological aspect of the matter was settled, but the original exponents of paresi-analgesia were reluctant to surrender its claims to separate recognition, and they continued to

bring forward in support of their contention new arguments of a clinical nature.

Roth of Moscow had already concluded, upon purely clinical grounds, that the disease was identical with syringomyelia. It was only after the result of Joffroy and Achard's autopsy, however, that the controversy began in earnest.

It would exceed the purpose of this review to furnish a detailed account of syringomyelia. We would refer for fuller information on the subject to the very complete treatise by Bruhl, and content ourselves with the summary drawn up by Prof. Charcot (*Gaz. Hebdom.*, 1891, p. 193). It will be found to contain a notice of the principal symptoms to which we have called the reader's attention in the first part of this paper.

"1st. *Symptoms of amyotrophic paresis*.—These include muscular atrophy of the Duchenne-Aran type, gradual and symmetrical in its course, accompanied with fibrillar twitchings, and without exaggerated reflexes.

"2nd. *Disorders of sensation*.—Prominent among these is the characteristic sign for which I have proposed the name of syringomyelitic dissociation. It is not pathognomonic since it is manifested also in leprosy and hysteria, but taken in conjunction with general and progressive muscular wasting, especially where trophic derangements are also present, it imparts a highly distinctive character to the train of symptoms. The sensory affection is distributed in segments, and the muscular and special senses are not involved. Syringomyelia, like disseminated sclerosis and other diseases of the central nervous system, may be complicated by hysteria. The symptoms of the latter will in that case co-exist, and to this association is doubtless due the concentric diminution of the field of vision which has so often been met with in syringomyelia.

"*Trophic disturbances*.—Under this heading are included lesions of the skin and subcutaneous structures, ligaments and bones, depending upon dynamic or organic changes in the central or peripheral nervous system. Among such lesions, involving the skin and subcutaneous cellular tissue, are bullous eruptions, white or blue cedematous swelling of the extremities (Roth and Remak), pseudo-erysipelas, the condition known as *glossy skin*, gangrene, and analgesic whitlow, resembling that described by Morvan. Spontaneous fractures, joint affections like those which occur in tabes, spinal curvature and, finally, a special deformity of the hands, in some respects similar to Marie's acromegaly, and to which the name of chiromegaly might be

applied—these are the more common disorders of the ligaments and bones met with in syringomyelia.”

Morvan was naturally the least disposed to suffer the disease to which he had given his name to be absorbed in the identity of syringomyelia, and taking up the three main symptoms which belonged to it he endeavoured to shew that there were distinctions in the two cases. Whitlows, which he regarded as the essential feature of Morvan's disease, do not occur, as a rule, in syringomyelia. This is admitted by his opponents who, however, traverse the inference, urging that there is nothing more characteristic of syringomyelia than the irregularity of its symptoms; that it does not follow from the occasional absence of the whitlow that its presence is not due to that disease, and that if one symptom of a group is sometimes wanting, it is not on that account expedient to create an entirely new nomenclature for every possible combination. Moreover, though the occurrence of the whitlow is not invariable, neither is it exceptional. It has been observed in a great many cases (in four quoted by Bruhl, in one out of two by Roth, and in others by Schultze, Mader, Czerny, Joffroy, Achard and Charcot), and it has been observed as the earliest symptom of the disease. The unsymmetrical distribution of Morvan's disease, again, cannot be made to serve as a point of distinction, since syringomyelia is sometimes limited to one side, or to a limb. Setting aside the question of whitlows, it needs but a glance at the general character of the trophic lesions common to both affections—lesions of the skin and of the bones, of tendons and joints—to emphasise their similarity, if not to proclaim their identity from this point of view.

There has been even more controversy on the subject of the sensory derangements, and it is upon these that certain authorities have taken their stand as “unconvinced, recalcitrant, and sceptic,” to use the words of Charcot. In Morvan's disease neuralgic pains usually precede analgesia; then follows paresis and muscular atrophy; analgesia comes last. It fixes in most cases upon the hand, the forearm, and part of the arm. Sensibility is abolished not only for pain, but for touch and for temperature also. Morvan in his fifth memoir, which was written with the express purpose of refuting the supposed identity with syringomyelia, insists particularly upon this. According to him the dissociation of the modes of sensibility, so characteristic of syringomyelia, is never met with in Morvan's whitlow. The dissociation in question has been well defined by M. Charcot as a condition in which the perception of pain and temperature is

lost, while the sense of touch is retained. "Some writers have gone so far as to consider this dissociated anæsthesia as the invariable and exclusive attribute of syringomyelia."

"M. Morvan has been at pains to show that his patients always exhibit some impairment of the sense of touch, and that therefore they are not instances of the dissociated sensibility which is taken to be a mark of syringomyelia."

This argument would serve if the dissociation were in fact pathognomonic, but Charcot has expressly stated that it occurs also in hysteria and leprosy; and Minor (of Moscow) has observed it repeatedly in traumatic hæmatomyelia. On the other hand, it has been absent in some cases of undoubted syringomyelia. Instances are on record in which sensibility to heat alone was affected, the perception of pain and touch remaining normal (Déjerine and Quilant). "Theoretically, it must be admitted that tactile sensibility may be completely destroyed as by implication of the sensory path in the spinal cord within the lesion, or by sufficiently extensive damage to the peripheral nerves." The autonomist theory is therefore met by the two-fold objection that there is no symptom absolutely specific, and that the dissociation of the nerves of sensibility is not an invariable phenomenon in syringomyelia. But if this were not sufficient their contention is destroyed by the fact that the sensory disturbances, which are claimed as characteristic of syringomyelia, are also to be met with in connection with Morvan's whitlow. Some cases of the former disease exhibit only a disproportion between tactile anæsthesia and the impairment of sensibility to pain and temperature. This same condition has been recorded in many instances of paresi-analgesia (Obs. 1, 10, 19 of Morvan, Broca, Dayot, Charcot). Muscular wasting, paresis, spinal curvature, and the absence of sphincter trouble, the slow and insidious advance, are characters common to both affections. "In short, the further the analysis is carried the more completely is the artificial distinction between the two disposed of, and they are seen to pass into each other by imperceptible transitions. Each of the symptoms assumed to be specific has only a relative value. The difference resolves itself into a question of comparative frequency. On this ground it will serve a useful purpose to recognise Morvan's disease as a clinical type, but there is no warrant for rejecting syringomyelia as the underlying condition" (Achard). Bernhardt goes farther, and from a summary of the observations arrives at the following conclusions:—

(1) Clinically there is no material distinction between Morvan's disease and the affection variously described as syringomyelia, medullary glioma, and partial paralysis of sensation. (2) Whenever an autopsy has been possible spinal lesions were observed in Morvan's disease, as well as in syringomyelia. (3) From a pathological point of view the lesions are not constant and invariable, but derive their significance from the seat of the disease and from its progress, which is often extremely gradual. (4) The peripheral nerve lesions observed in both diseases are entirely comparable to those which occur in *tabes dorsalis*.

To conclude the account of this second period of the history of paresi-analgesia we may quote M. Charcot as reflecting contemporary opinion on the subject. "It has been abundantly proved that Morvan's disease and syringomyelia are the same clinically and pathologically. At the same time there are certain forms of syringomyelia which need to be distinguished on account of their individual characters, and of these there is one which especially deserves to be studied apart. It is but just that it should bear the name of the skilful and sagacious observer who brought it to light and gave it a clinical existence. I propose to you, therefore, to designate this form as syringomyelia, type Morvan." Thus the matter had been decided by general assent, when quite recently Morvan again came forward to claim a separate recognition for his disease. Having taken account of the work by Déjerine and Quilant he investigated the field of vision in such of his patients as were within his reach, and whom he considered to afford typical illustrations of the malady of which he makes himself the champion. He believes that he has established a notable difference as to the frequency of a constricted field of vision between these and the cases of syringomyelia reported by Déjerine and Quilant. Of eight patients three exhibited no diminution, and in three others the symptom was unilateral, while anæsthesia extended to the head. In addition to this he dwells upon the invariable occurrence of whitlow and the fissured skin, which is absent in many cases of syringomyelia. As to pathological evidence, undeterred by the autopsies of Joffroy and Achard and of Prouff, he relies upon that of Gombault, which in his view confers upon paresi-analgesia the stamp of a specific peripheral neuritis, having characters which were not found in the other autopsies, where the subjects showed the lesions of syringomyelia. In the latter syringomyelia was a secondary affection, and the cases were not examples of uncomplicated paresi-analgesia.

This, the latest, and a very recent (June 27th, 1891) protest makes it evident that the matter is not finally settled to M. Morvan's satisfaction. The only concession he is prepared to make is that "Morvan's disease may have its origin in more lesions than one. The future will show to what extent the symptoms correspond with the various lesions and whether, as I still firmly believe, there is such a thing as a Morvan's disease."

Third Period.—Dermatological. Anæsthetic Leprosy and Syringomyelia, 1891.

The third interpretation of Morvan's disease is the development of the present time. The authorities by whom it was studied, however, were struck from the first by obvious analogies, and by common symptoms which it was difficult to account for, and, as a rule, the best treatises have handled the subject of the differential diagnosis from leprosy in a manner at once so prolix and so feeble as to suggest a good deal of doubt on the subject. Thus, for instance, in Louazel's paper it is laid down that the only distinction may be the presence of leprosy patches and maculæ, and that the patient's statement will disclose the exotic origin of the disease. Anæsthetic leprosy, the writer remarks, when it attacks the upper extremity gives rise to muscular wasting, paralysis and anæsthesia, the very symptoms which are essentially characteristic both of syringomyelia and Morvan's disease. The trophic derangements take the form of indolent and slowly progressive ulcers, which may be situated at the ends of the fingers—again the counterpart of the specific lesions of Morvan's disease.

Dealing with the same question in a lecture delivered on the 15th March, 1890, and published in the *Progrès Médical*, M. Charcot attempted to define the distinctions between Morvan's disease and leprosy. It is the anæsthetic form alone which presents any ambiguity. It attacks the upper extremities, causing paralysis, wasting, anæsthesia and mutilation. "It is at present," Charcot says, "a foreign disease, almost unknown amongst us. The fingers become deformed; the skin breaks and an ulcer grows in depth and extent until finally it may occupy the entire circumference of one finger, or may stop short of this. Then follows, without pain or reaction of any sort, the removal of the finger either spontaneously or by surgical interference. These events have their cause in a symmetrical neuritis described by Virchow. There is another mark peculiar to leprosy—the leprosy patches or maculæ of large size scattered about different parts of the body (macular leprosy), which have acquired the name of

morphœa alba or rubra, according to their appearance." In short, a diagnosis so carefully considered, and by a dualist of uncompromising convictions, relies entirely upon two points which appear to be the only ones not common to anæsthetic leprosy and syringomyelia, *viz.*, the exotic origin of the former, and the presence in it of leprous patches or spots. All the other symptoms belong indifferently to either, and a difference in their degree, if it be said to exist, is not to be depended upon for diagnosis in view of the diversity and variety so commonly affected by the peripheral symptoms in disease of the central nervous organs.

A remarkable communication made by Dr. Thibierge to the Société Médicale des Hôpitaux was the signal for a lively controversy. Dr. Thibierge exhibited a patient suffering from leprosy, with sensory disturbances resembling those of syringomyelia. He had been seen by several authorities, and the diagnosis had been much disputed. Many of the symptoms, and especially those having reference to sensation, pointed clearly to syringomyelia. In short, the case was one in which the balance of opinion wavered between the latter disease and leprosy, but M. Thibierge had the skill to direct the conclusion and the good fortune to secure Charcot's adhesion. From beginning to end of the discussion Thibierge made no allusion to the possible identity of the two diseases, between which the actual decision was so embarrassing. He contented himself with attacking one of Charcot's positions—that founded on the exotic character of leprosy—for he said, "Leprosy is to be met with in France and in Paris often enough. At present there are six lepers at the Hôpital St. Louis. In 1886 M. Leloir, in conjunction with MM. Hardy and Bernier, estimated that there were in Paris from sixty to one hundred lepers, imported from abroad. These figures do not exceed but rather fall short of the truth, and they are hardly sufficient to give a just idea of the number of patients under treatment for leprosy in the hospitals of Paris."

This statement was an unconscious step towards the unification of leprosy and syringomyelia. There remained but one of Charcot's arguments to be overthrown—that founded on the presence of macular eruptions. It was reserved for Dr. Zambaco Pacha to perform the feat. On the 25th April, 1891, he published in the *Gazette Hebdomadaire*, a statement in which he contended with evident conviction and with telling arguments for the identity of syringomyelia with anæsthetic leprosy. Morvan's analgesic whitlow is, he says, clinically indistinguishable from some cases

of anæsthetic leprosy. "In both alike are seen vasomotor disturbances, multiple whitlows leading to progressive mutilation of the fingers, anæsthesia, and various trophic changes. The correspondence is absolute in all particulars, even to their experimental reproduction, between the newly discovered malady and the prehistoric disease which is wrongly believed to have disappeared from central Europe. I submit that had M. Morvan's cases been observed in a leprous country it would not have occurred to any one to make a new disease for their reception. According to the distinguished professor of the Salpêtrière, the presence of spots of pigmentation and the birth, or, at least, the prolonged residence of the patient in a leprous country, may be made the means of distinguishing leprosy from syringomyelia. "But this pigmentation is far from being a constant appearance, and the majority of the subjects of anæsthetic leprosy or Danielssen's disease, whom M. Zambaco has seen in the East, failed to present it."

The weak point in Zambaco's case is obviously the want of pathological evidence. Should it appear from the autopsy in the case of a leper affected with Danielssen's disease, that the spinal cord exhibited the lesions discovered by Joffroy and Achard in Morvan's disease or syringomyelia, there would then be no course open but to submit and once more surrender Morvan's disease as an appanage of leprosy. Zambaco holds out the prospect of an examination—pathological and bacteriological—of a cord, now in process of preparation. That should decide the matter. Whatever the truth may be M. Zambaco's conviction is on record. "To my mind the most natural inference from a purely clinical point of view is that all three (leprosy, Morvan's disease, and syringomyelia) belong to a single condition which is subject only to slight modifications, according to climate and to hygienic surroundings." It must be observed here that M. Zambaco's opinion is not adopted by Thibierge, to whom his paper was inscribed. While admitting the very close analogy from a clinical aspect between the two other morbid states and certain forms of leprosy or Danielssen's disease, he thinks that it would be premature at present to insist upon their absolute identity.

The absence of leprous tubercles in cases of syringomyelia is much against Zambaco's contention. For those who advocate the contagiousness of leprosy—but M. Zambaco is not one of them—it will be an objection that Morvan's disease has never been thought to be contagious. Leprosy induces a cachexia and stamps the features with an unmistakable character, which is

never seen in syringomyelia. Finally, anatomical investigation, which has exposed the presence of peripheral neuritis in syringomyelia, has never detected in it the modes which are so prominent a formation in leprous neuritis. In this position the matter rests at present. We refrain from expressing an opinion of our own, but like Dr. Tumon, who lately published in the *France Médicale* an excellent critique on the subject, we would say, "Pathological anatomy and bacteriology have not yet spoken." We await their decision, and till it is given it is useless to speculate about the future destiny of Morvan's disease.

II.—*Syringomyelia, type Morvan*, by Ch. Achard (*Gaz. des hôp.*, July 16th, 1891).

The excavating lesion of the spinal cord, to which M. Ollivier, of Angers, has given the name of syringomyelia, has been recognised only within the last few years. The place which it occupies in the category of nervous diseases seems to grow daily with the progress of our knowledge concerning its various manifestations. It has already absorbed a great number of the progressive muscular atrophies of the Duchenne-Aran type, and without doubt it covers also many cases of cervical pachymeningitis. At the present time there is a disposition to include within its range most of the symptoms hitherto grouped as a separate disease—a disease which was first investigated by a most distinguished observer, M. Morvan, of Lannilis, and which was described as paresi-analgesia, associated with whitlows. The intimate relations between Morvan's disease and syringomyelia have attracted universal notice. The latter is extremely variable in its symptoms. It is generally characterised by a muscular wasting, most marked in the hands, but it is chiefly distinguished by a remarkable perversion of sensation, such that the perception of pain and temperature are lost, while the sense of touch remains unimpaired. Morvan's disease would appear at first sight sufficiently distinctive. Its special feature is the formation of multiple and recurring whitlows, associated with paresis, muscular wasting, and, above all, analgesia. Moreover, according to M. Morvan, tactile sensibility is always impaired.

When the matter is inquired into more closely, however, the analogy between the two affections is very striking. Thus the symptoms in both have the same localisation, namely, the upper limbs; spinal curvature is equally common in the two, and the lesions in either have the same gradual evolution. A critical examination of the supposed distinctive features will show that the trophic disturbances, and notably the whitlows, are not

peculiar to the variety described by M. Morvan, but that they take place also in cases of undoubted syringomyelia. Turning to the dissociated anæsthesia again, the condition is not restricted to the latter; not only is it found in diseases of a totally different nature, as in hysteria (Charcot, Raymond), traumatic hæmatomyelia (Minor), compression of the spinal cord and nerve roots as a result of injury (Charcot), locomotor ataxy and leprosy; but it occurs also in Morvan's disease, and its existence was determined by Morvan himself in two of his earliest patients. Moreover, in the latter affection tactile anæsthesia is often very slight and limited, whilst analgesia and insensibility to heat and cold are both more extensive and more pronounced.

These considerations are undoubtedly very damaging to the position that the symptoms alluded to are of a pathognomonic character. A differential diagnosis must be based upon the most unsubstantial grounds, and the method of controversy alone tends to raise doubts against the dualist hypothesis. The opposite view, the hypothesis of identity, advocated by Roth, is sustained by very much stronger arguments. M. Joffroy and I were the first to bring forward pathological evidence in its support. In a case which presented the typical symptoms of Morvan's disease, we discovered the lesions of syringomyelia. Lately a second autopsy has corroborated the first.¹

This is a conclusive argument in favour of the unitarian theory. Nevertheless, the anatomical observations upon which it is founded are as yet too few to warrant the neglect of purely clinical deductions. A very great interest of this kind attaches to cases in which the classical traits of syringomyelia, and especially dissociated anæsthesia, are found side by side with the special feature of Morvan's disease, namely, analgesic whitlow. Marwedel has published a case of this kind, where the onset of the disease was marked by the formation of whitlows, and where dissociated anæsthesia was present, though not complete.² One of Bernhardt's exhibited dissociation of a typical kind,³ and Hoffman has described and figured a similar instance.⁴

¹ A. Joffroy et Ch. Achard. Un cas de Maladie de Morvan avec autopsie, *Archives de médecine expérimentale*, 1^{er} juillet, 1890, p. 540;—Syringomyélie et maladie de Morvan, *Bulletin de la Société médicale des hôpitaux*, 11 juillet, 1890, p. 640.—Ch. Achard. Syringomyélie et maladie de Morvan, *Gazette hebdomadaire*, 25 Octobre, 1890, p. 504.—A. Joffroy. Nouvelle autopsie de maladie de Morvan; syringomyélie, *Bulletin de la Société médicale des hôpitaux*, 27 février, 1891, p. 92.

² G. Marwedel. Beitrag zur Casuistik der Syringomyélie, *Munch. Med. Wochens.*, 18 Novembre, 1890, p. 810.

³ A. Bernhardt. Ueber die sogenannte "Morvan's che Krankheit," *Deuts. Med. Wochens.*, 19 Février, 1891, p. 285.

⁴ J. Hoffman. *Samml. Klin. Vortr.*, von Volkmann, 1891, 20.

Both these writers determine in favour of the identity of Morvan's disease and syringomyelia. Quite recently M. Charcot exhibited in his clinique a patient in whom the two symptoms, dissociated anæsthesia and analgesic whitlow, were combined,¹ and there is another such at present under the care of M. Debore. The patient in this case is a man, forty-nine years of age and a native of Paris. His personal history is very full of incident. When a soldier in Algiers he had typhus, then ague, and afterwards contracted scurvy in Mexico. He came into hospital suffering from pulmonary congestion of a tubercular character. His family history furnishes a statement of locomotor ataxy in one brother and of chorea in a younger sister. Twelve years ago he had a whitlow on his right thumb. Since that time a succession of others to the number of nine have formed on different fingers of either hand. These whitlows, or, at any rate, the earlier ones, were accompanied with intense pain. Though this is not the rule, it is recognised as occurring sometimes in Morvan's disease. The patient gives a very trustworthy account of himself, and we have his authority for a very remarkable particular. The formation of whitlow was attended with inflammation, and fever as well as pain, and the finger was much swelled up to the first joint. After the lapse of about twelve days, when he judged that the abscess was mature, the patient opened it himself with a pen-knife, and the operation was free from pain. In this may be seen one of the most characteristic features of analgesic whitlow, and there can be no doubt but that the pain at the outset was an incident of the inflammation which extended beyond the analgesic area.

The whitlows were severe, and one of them led to the destruction of the second phalanx of the thumb. Both hands are deformed. On the right side in particular the muscles are wasted, and the hand has an ape-like appearance. The nails are unequal, curved, broken and split, the skin dry and scaly. On the palmar surface the cuticle is thickened, and bears regular corns opposite the heads of the metacarpal bones. The scars resulting from the incisions made into the whitlows are also the seat of a horny thickening of the epidermis. To conclude, the hands bear the marks of injury, which, with every precaution, the patient has inadvertently sustained owing to his analgesia. Here we have a true picture of the mutilation which the hands undergo in Morvan's disease.

¹ J. M. Charcot. Sur un cas de syringomyélie avec panaris analgésiques (type Morvan), *Gazette hebdomadaire*, 11 Avril, 1891, p. 285.

A careful investigation of the feeling power shows that the dissociation of syringomyelia is clearly marked. The sense of touch is everywhere retained, while analgesia and thermo-anæsthesia are present. In the right hand, and especially in the forearm, as high as the elbow the prick of a pin is felt only as contact. The patient is insensible of the cold of ice and of the heat of water at 70°. The same phenomena are observed on the left side, but they are limited to the palm and to the ring and little fingers. All the characters of syringomyelitic anæsthesia are present, including its segmentary localisation, without reference to nerve distribution.

It follows that the diagnosis should be at once syringomyelia and Morvan's disease. The disease is a combination of the two clinical types, or, to be more accurate, it is one of the varied forms of syringomyelia, that which in a recent paper we proposed to call the type associated with Morvan's whitlow.

In conclusion we would refer to one point worth mentioning in the case which has just been described. It is the absolute integrity of the field of vision. Now MM. Déjerine and Tuiant have regarded diminution of the field of vision as an important mark of syringomyelia, and they have produced seven cases in point. In Bernhardt's case there appeared to be some limitation of the field, at least for colours. On the other hand, M. Charcot has established the absence of this incident in fifteen cases, namely, in six of his own patients, in one whose case was published by MM. Charcot and Brissaud, in six of Roth's and two of Hoffman's. To these we might add not only the case which has been recounted here, but also another which we have lately recorded in conjunction with M. Joffroy,¹ including some others noticed by M. Brianceau.² The negative instances recorded amount altogether to twenty-one. On the other hand, three cases (Oppenheim, Roth, Joffroy) in which restriction of the field of vision was observed, cannot be admitted for the purposes of the discussion, since the symptom might fairly be ascribed to a co-existing hysteria. It results from a survey of all the facts that the incident in question is not of frequent occurrence in syringomyelia, and that its connection with the spinal disease is by no means proved.

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¹ A. Joffroy et Ch. Achard. "Syringomyélie non gliomateuse associée à la maladie de Basedow," *Archives de médecine expérimentale*, 1^{er} janvier, 1891, p. 60.

² J. Brianceau. "Contribution à l'étude du champ visuel dans la syringomyélie et la maladie de Morvan," Thèse de Paris, 1891.