

## **CHARCOT (1893)**

On the 16th of August of this year, J.M. Charcot died suddenly, without pain or illness, after a life of happiness and fame. In him, all too soon, the young science of neurology has lost its greatest leader, neurologists of every country have lost their master teacher and France has lost one of her foremost men. He was only sixty-eight years old; his physical strength and mental vigour, together with the hopes he so frankly expressed, seemed to promise him the long life which has been granted to not a few mental workers of this century. The nine imposing volumes of his *Oeuvres complètes*, in which his pupils had collected his contributions to medicine and neuropathology, his *Leçons du mardi*, the yearly reports of his clinic at the Salpêtrière, and other works besides - all these publications will remain precious to science and to his pupils; but they cannot take the place of the man, who had still much more to give and to teach and whose person or whose writings no one has yet approached without learning something from them.

He took an honest, human delight in his own great success and used to enjoy talking of his beginnings and the road he had travelled. His scientific curiosity, he said, had been aroused early, when he was still a young interne, by the mass of material presented by the facts of neuropathology, material which was not in the least understood at the time. In those days, whenever he went the rounds with his senior in one of the departments of the Salpêtrière (the institution for the care of women) amid all the wilderness of paralyses, spasms and convulsions for which forty years ago there was neither name nor understanding, he would say: ‘

*Faudrait y retourner et y rester*’, and he kept his word. When he became *médecin des hôpitaux*, he at once took steps to enter the Salpêtrière in one of the departments for nervous patients. Having got there, he stayed where he was instead of doing what French senior physicians are entitled to do - transferring in regular succession from one department to another and from hospital to hospital, and at the same time changing their speciality as well.

Thus his first impression and the resolution it led him to were decisive for the whole of his further development. His having a great number of chronic nervous patients at his disposal enabled him to make use of his own special gifts. He was not a reflective man, not a thinker: he had the nature of an artist - he was, as he himself said, a ‘visuel’, a man who sees. Here is what he himself told us about his method of working. He used to look again and again at the things he did not understand, to deepen his impression of them day by day, till suddenly an understanding of them dawned on him. In his mind’s eye the apparent chaos presented by the continual repetition of the same symptoms then gave way to order: the new nosological pictures emerged, characterized by the constant combination of certain groups of symptoms. The complete and extreme cases, the ‘types’, could be brought into prominence with the help of a certain sort of schematic planning, and, with these types as a point of departure, the eye could travel over the long series of ill-defined cases - the ‘*formes frustes*’ - which, branching off from one or other characteristic feature of the type, melt away into indistinctness. He called this kind of intellectual work, in which he had no equal,

'practising nosography', and he took pride in it. He might be heard to say that the greatest satisfaction a man could have was to see something new - that is, to recognize it as new; and he remarked again and again on the difficulty and value of this kind of 'seeing'. He would ask why it was that in medicine people only see what they have already learned to see. He would say that it was wonderful how one was suddenly able to see new things - new states of illness - which must probably be as old as the human race; and that he had to confess to himself that he now saw a number of things which he had overlooked for thirty years in his hospital wards. No physician needs to be told what a wealth of forms were acquired by neuropathology through him, and what increased precision and sureness of diagnosis were made possible by his observations. But the pupil who spent many hours with him going round the wards of the Salpêtrière - that museum of clinical facts, the names and peculiar characteristics of which were for the most part derived from him would be reminded of Cuvier, whose statue, standing in front of the Jardin des Plantes, shows that great comprehender and describer of the animal world surrounded by a multitude of animal forms; or else he would recall the myth of Adam, who, when God brought the creatures of Paradise before him to be distinguished and named, may have experienced to the fullest degree that intellectual enjoyment which Charcot praised so highly.

Charcot, indeed, never tired of defending the rights of purely clinical work, which consists in seeing and ordering things, against the encroachments of theoretical medicine. On one occasion there was a small group of us, all students from abroad, who, brought up on German academic physiology, were trying his patience with our doubts about his clinical innovations. 'But that can't be true,' one of us objected, 'it contradicts the Young-Helmholtz theory.' He did not reply 'So much the worse for the theory, clinical facts come first' or words to that effect; but he did say something which made a great impression on us: 'La theorie, c'est bon, mais ca n'empeche pas d'exister'.

For a whole number of years Charcot occupied the Chair of Pathological Anatomy in Paris, and he carried on his neuropathological studies and lectures, which quickly made him famous abroad as well as in France, on a voluntary basis and as a secondary occupation. It was a piece of good fortune for neuropathology that the same man could undertake the discharge of two functions: on the one hand he created the nosological picture through clinical observation, and on the other he demonstrated that the same anatomical changes underlay the disease whether it appeared as a type or as a forme fruste. It is very generally recognized how successful this anatomical clinical method of Charcot's was in the field of organic nervous diseases - in tabes, multiple sclerosis, amyotrophic lateral sclerosis, and so on. Years of patient waiting were often necessary before the presence of organic change could be proved in those chronic illnesses which are not directly fatal; and only in a hospital for incurables like the Salpêtrière was it possible to keep the patients under observation for such long periods of time. Charcot made his first demonstration of this kind before he had charge of a department. While he was still a student he happened to engage a maid-servant who suffered from a peculiar tremor and could not find a situation on account of her clumsiness.

Charcot recognized her condition as a paralysie choréiforme, a disease which had already been described by Duchenne, but whose basis was unknown. Charcot kept this interesting servant, although in the course of the years she cost him a small fortune in dishes and plates. When at last she died he was able to demonstrate from her case that paralysie choréiforme was the clinical expression of multiple cerebro-spinal sclerosis.

Pathological anatomy has to serve neuropathology in two ways. Besides demonstrating the presence of a morbid change, it must establish the localization of that change; and we all know that during the last two decades the second part of this task has aroused the greater interest of the two and has been more actively pursued. Charcot played a most distinguished part in this work, too, although the pioneer discoveries were not made by him. To begin with he followed in the footsteps of our fellow-countryman, Türck, who is said to have lived and carried on his researches in comparative isolation among us. When the two great innovations came - the Hitzig-Fritsch stimulation experiments and Flechsig's findings on the development of the spinal cord - which ushered in a new epoch in our knowledge of the 'localization of nervous diseases', Charcot's lectures on localization played the largest and best part towards bringing the new theories into touch with the clinical work and making them fruitful for it. As regards in especial the relationship of the somatic muscular apparatus to the motor area of the human cerebrum, I may remind the reader of the long time during which the more exact nature and topography of this relationship was in question. (Was there a common representation of both extremities in the same areas? or was there a representation of the upper extremity in the anterior central convolution and if the lower extremity in the posterior one - that is, a vertical disposition?) At last, continued clinical observations and experiments in stimulation and extirpation on living subjects during surgical operations decided the question in favour of the view of Charcot and Pitres that the middle third of the central convolutions mainly serves the representation of the arm, while the upper third and the mesial portion serve that of the leg - that is to say, that in the motor area the disposition is a horizontal one.

An enumeration of Charcot's separate contributions would not enable us to establish his significance for neuropathology. For during the last two decades there have not been many themes of any importance in whose formulation and discussion the school of the Salpêtrière has not had an outstanding share; and the 'school of the Salpêtrière' was, of course, Charcot himself, who, with the wealth of his experience, the transparent clarity of his diction and the plasticity of his descriptions, could easily be recognized in every publication of the school. Among the circle of young men whom he thus gathered round him and made into participants in his researches, a few eventually rose to a consciousness of their own individuality and made a brilliant name for themselves. Now and then, even, it happened that one of them would come forward with an assertion which seemed to the master to be more clever than correct; and this he would argue against with plenty of sarcasm in his conversation and lectures, but without doing any damage to his affectionate relationship with his pupil. And in fact Charcot leaves behind him

a host of pupils whose intellectual quality and whose achievements up to now are a guarantee that the study and practice of neuropathology in Paris will not so quickly slip down from the height to which Charcot has brought them.

In Vienna we have repeatedly had occasion to realize that the intellectual significance of an academic teacher is not necessarily combined with a direct personal influence on younger men which leads to the creation of a large and important school. If Charcot was so much more fortunate in this respect we must put it down to the personal qualities of the man - to the magic that emanated from his looks and from his voice, to the kindly openness which characterized his manner as soon as his relations with someone had overcome the stage of initial strangeness, to the willingness with which he put everything at the disposal of his pupils, and to his life-long loyalty to them. The hours he spent in his wards were hours of companionship and of an exchange of ideas with the whole of his medical staff. He never shut himself away from them there. The youngest newly-qualified physician walking the wards had a chance of seeing him at his work and might interrupt him at it; and the same freedom was enjoyed by students from abroad, who, in later years, were never lacking at his rounds. And, lastly, on the evenings when Madame Charcot was at home to a distinguished company, assisted by a highly-gifted daughter who was growing up in the likeness of her father, the pupils and medical assistants who were always present met the guests as part of the family.

In 1882 or 1883, the circumstances of Charcot's life and work took on their final form. People had come to realize that the activities of this man were a part of the assets of the nation's 'gloire', which, after the unfortunate war of 1870-1, was all the more jealously guarded. The government, at the head of which was Charcot's old friend, Gambetta, created a Chair of Neuropathology for him in the Faculty of Medicine (so that he could give up the Chair of Pathological Anatomy) and also a clinic, with auxiliary scientific departments, at the Salpêtrière. 'Le service de M. Charcot' now included, in addition to the old wards for chronic female patients, several clinical rooms where male patients, too, were received, a huge out-patient department - the 'consultation externe' -, a histological laboratory, a museum, an electro-therapeutic department, an eye and ear department and a special photographic studio. All these things were so many means of keeping former assistants and pupils permanently at the clinic in secure posts. The two-storeyed, weathered-looking buildings and the courtyards which they enclosed reminded the stranger vividly of our Allgemeines Krankenhaus; but no doubt the resemblance did not go far enough. 'It may not be beautiful here, perhaps,' Charcot would say when he showed a visitor his domain, 'but there is room for everything you want to do.'

Charcot was in the very prime of life when this abundance of facilities for teaching and research were placed at his disposal. He was a tireless worker, and always, I believe, the busiest in the whole institute. His private consultations, to which patients flocked 'from Samarkand and the Antilles', could not keep him from his teaching activities or his researches. There is no doubt that this throng of people did not turn to him solely because he was a famous discoverer but quite as much because he was a great physician and friend of man, who could always find an

answer to a problem and who, when the present state of science did not allow him to know, was able to make a good guess. He has often been blamed for his therapeutic method which, with its multiplicity of prescriptions, could not but offend a rationalistic conscience. But he was simply continuing the procedures which were customary at that time and place, without deceiving himself much about their efficacy. He was, however, not pessimistic in his therapeutic expectations, and repeatedly showed readiness to try new methods of treatment in his clinic: their short-lived success was to find its explanation elsewhere.

As a teacher, Charcot was positively fascinating. Each of his lectures was a little work of art in construction and composition; it was perfect in form and made such an impression that for the rest of the day one could not get the sound of what he had said out of one's ears or the thought of what he had demonstrated out of one's mind. He seldom demonstrated a single patient, but mostly a series of similar or contrasting cases which he compared with one another. In the hall in which he gave his lectures there hung a picture which showed 'citizen' Pinel having the chains taken off the poor madmen in the Salpêtrière. The Salpêtrière, which had witnessed so many horrors during the Revolution, had also been the scene of this most humane of all revolutions. At such lectures Maître Charcot himself made a curious impression. He, who at other times bubbled over with vivacity and cheerfulness and who always had a joke on his lips, now looked serious and solemn under his little velvet cap; indeed, he even seemed to have grown older. His voice sounded subdued. We could almost understand how ill-disposed strangers could reproach the whole lecture with being theatrical. Those who spoke like this were doubtless accustomed to the formlessness of German clinical lectures, or else forgot that Charcot gave only one lecture in the week and could therefore prepare it carefully.

In this formal lecture, in which everything was prepared and everything had to have its place, Charcot was no doubt following a deeply-rooted tradition; but he also felt the need to give his audience a less elaborated picture of his activities. This purpose was served by his out-patient clinic of which he took personal charge in what were known as his 'Leçons du mardi'. There he took up cases which were completely unknown to him; he exposed himself to all the chances of an examination, all the errors of a first investigation; he would put aside his authority on occasion and admit - in one case that he could arrive at no diagnosis and in another that he had been deceived by appearances; and he never appeared greater to his audience than when, by giving the most detailed account of his processes of thought and by showing the greatest frankness about his doubts and hesitations, he had thus sought to narrow the gulf between teacher and pupil. The publication of these improvised lectures, given in the year 1887 and 1888, at first in French and now in German as well, has also immeasurably widened the circle of his admirers; and never before has a work on neuropathology had such a success with the medical public as this.

At about the time at which the clinic was established and at which he gave up the Chair of Pathological Anatomy, a change occurred in the direction of Charcot's scientific pursuits, and to this we owe the finest of his work. He now pronounced

that the theory of organic nervous illnesses was for the time being fairly complete, and he began to turn his attention almost exclusively to hysteria, which thus all at once became the focus of general interest. This, the most enigmatic of all nervous diseases, for the evaluation of which medicine had not yet found a serviceable angle of approach, had just then fallen into thorough discredit; and this discredit extended not only to the patients but to the physicians who concerned themselves with the neurosis. It was held that in hysteria anything was possible, and no credence was given to a hysteric about anything. The first thing that Charcot's work did was to restore its dignity to the topic. Little by little, people gave up the scornful smile with which the patient could at that time feel certain of being met. She was no longer necessarily a malingerer, for Charcot had thrown the whole weight of his authority on the side of the genuineness and objectivity of hysterical phenomena. Charcot had repeated on a small scale the act of liberation in memory of which Pinel's portrait hung in the lecture hall of the Salpêtrière. Once the blind fear of being made a fool of by the unfortunate patient had been given up - a fear which till then had stood in the way of a serious study of the neurosis - the question could arise as to what method of approach would lead most quickly to a solution of the problem. A quite unbiased observer might have arrived at this conclusion: if I find someone in a state which bears all the signs of a painful affect - weeping, screaming and raging - the conclusion seems probable that a mental process is going on in him of which those physical phenomena are the appropriate expression. A healthy person, if he were asked, would be in a position to say what impression it was that was tormenting him; but the hysteric would answer that he did not know. The problem would at once arise of how it is that a hysterical patient is overcome by an affect about whose cause he asserts that he knows nothing. If we keep to our conclusion that a corresponding psychical process must be present, and if nevertheless we believe the patient when he denies it; if we bring together the many indications that the patient is behaving as though he does know about it; and if we enter into the history of the patient's life and find some occasion, some trauma, which would appropriately evoke precisely those expressions of feeling - then everything points to one solution: the patient is in a special state of mind in which all his impressions or his recollections of them are no longer held together by an associative chain, a state of mind in which it is possible for a recollection to express its affect by means of somatic phenomena without the group of the other mental processes, the ego, knowing about it or being able to intervene to prevent it. If we had called to mind the familiar psychological difference between sleep and waking, the strangeness of our hypothesis might have seemed less. No one should object that the theory of a splitting of consciousness as a solution to the riddle of hysteria is much too remote to impress an unbiased and untrained observer. For, by pronouncing possession by a demon to be the cause of hysterical phenomena, the Middle Ages in fact chose this solution; it would only have been a matter of exchanging the religious terminology of that dark and superstitious age for the scientific language of to-day.

Charcot, however, did not follow this path towards an explanation of hysteria, although he drew copiously upon the surviving reports of witch trials and of possession, in order to show that the manifestations of the neurosis were the same

in those days as they are now. He treated hysteria as just another topic in neuropathology; he gave a complete description of its phenomena, demonstrated that these had their own laws and uniformities, and showed how to recognize the symptoms which enable a diagnosis of hysteria to be made. The most painstaking investigations, initiated by himself and his pupils, extended over hysterical disturbances of sensibility in the skin and deeper tissues, over the behaviour of the sense organs, and over the peculiarities of hysterical contractures and paralyses, and of trophic disturbances and changes in metabolism. The many different forms of hysterical attack were described, and a schematic plan was drawn up by depicting the typical configuration of the major hysterical attack as occurring in four stages, which made it possible to trace the commonly observed 'minor' attacks back to this same typical configuration. The localization and frequency of occurrence of the so-called 'hysterogenic zones' and their relationship to the attacks were also studied, and so on. Once all this information about the manifestations of hysteria had been arrived at, a number of surprising discoveries were made. Hysteria in males, and especially in men of the working class was found far more often than had been expected; it was convincingly shown that certain conditions which had been put down to alcoholic intoxication or lead-poisoning were of a hysterical nature; it was possible to subsume under hysteria a whole number of affections which had hitherto not been understood and which had remained unclassified; and where the neurosis had become joined with other disorders to form complex pictures, it was possible to separate out the part played by hysteria. Most far-reaching of all were the investigations into nervous illnesses which followed upon severe traumas - the 'traumatic neuroses' - views about which are still under discussion and in connection with which Charcot has successfully put forward the arguments in favour of hysteria.

After the latest extensions of the concept of hysteria had so often led to a rejection of aetiological diagnosis, it became necessary to enter into the aetiology of hysteria itself. Charcot put forward a simple formula for this: heredity was to be regarded as the sole cause. Accordingly, hysteria was a form of degeneracy, a member of the 'famille névropathique'. All other aetiological factors played the part of incidental causes, of 'agents provocateurs'.

The construction of this great edifice was naturally not achieved without violent opposition. But it was the sterile opposition of an old generation who did not want to have their views changed. The younger among the neuropathologists, including those in Germany, accepted Charcot's teaching to a greater or lesser degree. Charcot himself was completely certain that his theories about hysteria would triumph. When it was objected that the four stages of hysteria, hysteria in men, and so on, were not observable outside France, he pointed out how long he himself had overlooked these things, and he said once more that hysteria was the same in all places and at every time. He was very sensitive about the accusation that the French were a far more neurotic nation than any other and that hysteria was a kind of national bad habit; and he was much pleased when a paper 'On a Case of Reflex Epilepsy', which dealt with a Prussian Grenadier, enabled him to make a long range diagnosis of hysteria.

At one point in his work Charcot rose to a level higher even than that of his usual treatment of hysteria. The step he took assured him for all time, too, the fame of having been the first to explain hysteria. While he was engaged in the study of hysterical paralyses arising after traumas, he had the idea of artificially reproducing those paralyses, which he had earlier differentiated with care from organic ones. For this purpose he made use of hysterical patients whom he put into a state of somnambulism by hypnotizing them. He succeeded in proving, by an unbroken chain of argument, that these paralyses were the result of ideas which had dominated the patient's brain at moments of a special disposition. In this way, the mechanism of a hysterical phenomenon was explained for the first time. This incomparably fine piece of clinical research was afterwards taken up by his own pupil, Pierre Janet, as well as by Breuer and others, who developed from it a theory of neurosis which coincided with the mediaeval view - when once they had replaced the 'demon' of clerical phantasy by a psychological formula.

Charcot's concern with hypnotic phenomena in hysterical patients led to very great advances in this important field of hitherto neglected and despised facts, for the weight of his name put an end once and for all to any doubt about the reality of hypnotic manifestations. But the exclusively nosographical approach adopted at the School of the Salpêtrière was not suitable for a purely psychological subject. The restriction of the study of hypnosis to hysterical patients, the differentiation between major and minor hypnotism, the hypothesis of three stages of 'major hypnosis', and their characterization by somatic phenomena - all this sank in the estimation of Charcot's contemporaries when Liébeault's pupil, Bernheim, set about constructing the theory of hypnotism on a more comprehensive psychological foundation and making suggestion the central point of hypnosis. It is only the opponents of hypnotism who, content to conceal their lack of personal experience behind an appeal to authority, still cling to Charcot's assertions and who like to take advantage of a pronouncement made by him in his last years, in which he denied to hypnosis any value as a therapeutic method.

Furthermore, the aetiological theories supported by Charcot in his doctrine of the 'famille névropathique', which he made the basis of his whole concept of nervous disorders, will no doubt soon require sifting and emending. So greatly did Charcot over-estimate heredity as a causative agent that he left no room for the acquisition of nervous illness. To syphilis he merely allotted a modest place among the 'agents provocateurs'; nor did he make a sufficiently sharp distinction between organic nervous affections and neuroses, either as regards their aetiology or in other respects. It is inevitable that the advance of our science, as it increases our knowledge, must at the same time lessen the value of a number of things that Charcot taught us; but neither changing times nor changing views can diminish the fame of the man whom - in France and elsewhere - we are mourning to-day.

VIENNA, August 1893.