vehicle and adjuvant to it than sarsaparilla in the old form of decoction, which, I regret to find, has fallen almost completely out of fashion. Sometimes, there is great intolerance of the iodide of potassium, even small doses producing dryness of the throat, headache, and coryza. Here the iodides of sodium and ammonium may be used with advantage; they may, perhaps, not be so efficient, but they are certainly much less irritating. The iodide of sodium is, I think, of the two to be preferred. I have found it necessary to descend to half-grain doses even of the iodide of sodium in some cases, and have in this way been able gradually to augment it up to ten or twelve grains, and with the most satisfactory results. I remember one patient especially in whom in this way full tolerance of the iodide of sodium was obtained, but who was at once upset by any attempt to give him iodide of potassium. This patient had severe tertiary syphilis, from which he recovered perfectly, and has remained well for years.

I have no explanation to suggest of the way in which the iodides operate so beneficially in tertiary syphilis. There is some reason to believe that they act as a solvent for some metallic substances which have become incorporated with the tissues—of lead, for example, and not improbably of mercury. Hence may arise their influence in causing salivation, as they not unfrequently do, in those who have taken mercury in excess; and hence the necessity for caution at the commencement of their employment in such cases. This is one way in which they may be of service, but it is not their only, or by any means their principal use, for their good effects are equally manifested when no mercury at all has been given, and also when the tertiary stage has set in, as is sometimes the case, without having been preceded by the secondary.

The main principle to be followed is, that mercury is the remedy for the secondary stage, and that the iodides are the remedy for the tertiary. I believe iodine to be seldom if ever useful, and usually harmful in the first, while mercury is rarely if ever admissible in the latter. There are cases, however, in which the two conditions overlap, in which tertiaries become developed while chronic secondary affections still remain; and here a combination or alternation of the two remedies becomes useful. I believe alternation to be better than combination, the iodide being used first until the tertiary symptoms are removed or amended, and the health improved; after which a mild course of mercury may be cautiously resorted to for the remaining secondary affections.

I have already mentioned that there are some, whose opinions are entitled to all respect, who think that iodine is insufficient for the cure of tertiary syphilis without the subsequent employment of mercury, and who are in the habit of using the latter systematically even in advanced cases. I have seen some few instances in which this practice has appeared to be of signal service; but I have seen so many others in which the results have been disastrous, that for a long time I have ceased to resort to it—the more so that I have met with so many of the most unpromising cases successfully carried through by persistence, in spite of all discouragement, in the use of the iodide of potassium. I think, as a matter of fact, that the cases of true tertiary disease in which mercury proves useful after the iodides have failed, will be found to be extremely rare. I should never suggest it myself unless the case appeared to be going on hopelessly from bad to worse. I should not think it sufficient cause that the symptoms remained stationary; they will often remain so even for months while the iodide is being taken, whereas they will immediately get worse if it be discontinued. This is no evidence, therefore, of its failure, for we are indebted to it for the maintenance of the *status quo*, which is no small matter in so serious a cachexia as that with which we have to deal. I should not give it up even if some fresh accession of symptoms were developed under its use, but should consider this as an additional reason for continuance, and for an increase of the dose. In the treatment of tertiary syphilis, time is on our side; patience and perseverance is the doctrine I wish to preach.

I have given an outline—a very imperfect one, as I am fully sensible—of what I believe to be the appropriate treatment of the different phases of syphilis. My chief object has been to allot to the two leading therapeutic agents—mercury and iodine—each its appropriate sphere; to confine the use of the former especially within properly circumscribed limits, because I believe it to be even now often used greatly in excess, much too empirically, without a sufficiently definite idea of what may be expected from it, or of the forms and periods of the disease to which it is applicable.

MR. JOHN SWINDALE has been awarded, on July 5th, £2 15s.; and on November 3rd, £3 15s., for efficient vaccination in the Binfield district of the Easthampton Union, Berks.

WE understand that Dr. Wickham Legg, Casualty Physician of St. Bartholomew's Hospital, is also a candidate for the vacant office of Assistant Physician.

DIPHTHERITIC PARALYSIS:

ITS NATURAL COURSE, PATHOLOGY, TREATMENT, AND RELATION TO PARALYTIC AFFECTIONS FOLLOWING FEVERS.*

By SIR JOHN ROSE CORMACK,

Chevalier of the Legion of Honour; M.D. Edin. and Paris; F.R.S.E.; Fellow of the Royal Colleges of Physicians of London and Edinburgh; Physician to the Hertford British Hospital, Paris; etc.

[Continued from BRITISH MEDICAL JOURNAL, October 17th, p. 489.]

THE case of S. M., which I have now so minutely described, affords in itself an almost complete study of the paralysis of diphtheria, so far as symptoms and termination are concerned. The history of no single case, however, can convey the whole truth in respect of the natural course, pathology, and treatment of the affection. I therefore proceed to give an account of the leading features of two other cases which have occurred in my practice. One is a case in which the paralytic symptoms were mild; and the diphtheria—the original disease, if I may so express myself—was of maximum intensity, tracheotomy having been necessitated as the only means of saving life. The other case was of considerable severity in the primary manifestations, and slight, though exceedingly characteristic, in the paralytic manifestations. The three cases, viewed together, show that there is no relation between the severity of the general or croupal, and the severity of the paralytic symptoms.

CASE.—On the morning of Friday, October 24th, 1873, soon after five o'clock, a young lady arrived in a carriage at my house, in a state of wild excitement and distress. The object of her visit was to fetch me immediately to aid her little brother, who, she informed me, had been, just before she left home, almost carried off in a suffocative paroxysm. She said he had gone to bed the previous evening between eight and nine o'clock, suffering only from a sore-throat and great debility, attributed to a diarrhoeal attack of some days' duration. Until she was hurriedly sent to fetch me, he had not been supposed to require more than domestic medical treatment. On my way to the residence of the patient, I obtained from his sister the material facts embraced in the following history of the case.

E. G., an English child, aged six-and-a-half years, returned to school, after his usual Sunday at home, on Monday, October 20th. He did not then seem quite well, yet there was nothing which seemed to call for his being specially attended to. On the 21st and 22nd, the master observed that the child frequently asked permission to leave the class for necessary purposes. On the afternoon of the 22nd, permission to retire was refused, under the impression that the request was made from a mere childish trick of idleness, and not under the constraining influence of a real necessity. The sequel showed that this was a mistake. When refused, the child burst into tears; and, unable to restrain the bowels from acting, saturated his clothes with a copious alvine discharge. He was undressed; and, his drawers being wet and dirty, he was dressed without them and sent home to the house of his parents, that his condition might be inquired into and treated. On the 23rd, he complained of sore-throat, breathed badly, and was observed to have nearly lost his voice. He had several liquid motions during the day. To cure the purging, he was made to drink rice-water freely, and for the other symptoms, attributed to his having caught cold in consequence of his having been sent home without his drawers, his mother administered an emetic prescribed by a neighbouring pharmacien on her report of the symptoms. The emetic was taken just before the child went to bed. The emetic operation—violent and of short duration—afforded very considerable temporary relief to the dyspnoea, which had been becoming more and more urgent and more and more frequently paroxysmally exacerbated for the preceding twenty-four hours. It was about six in the morning of the 24th October—twelve hours after the action of the emetic—that I first saw the patient. I then, in reply to questions addressed to me, informed the family that it was not in my power to allay alarm by giving a favourable prognosis.

The information I had received on my way to the house had excited my most unfavourable suspicions. A glance at the patient, and a few words spoken by him in reply to my salutation, immediately confirmed my fears, and impressed me with the conviction that examination of the patient would show him to be stricken with asthenic diphtheria already in the croupal stage, and probably advancing rapidly therein from bad to worse.

Before I entered, the child, as I was told, had considerably quieted from a sudden dyspnoeal paroxysm. I found him supported in bed by pillows in a semi-recumbent position. His countenance was painfully anxious in expression, and dirty pallid in complexion. His words were

* Partly read before the Medical Section at the Annual Meeting of the British Medical Association in Norwich, August 1874.

spoken distinctly, but very slowly and in a feebly husky whisper. The neck had a turgid appearance, the large veins showing conspicuously, and some of the glands on both sides near the maxillary angle were enlarged and somewhat tender to the touch. The pupils were responsive to the light; they were abnormally dilated. From the nostrils, there was a slight serous oozing, which may be described as a dampness apparent at the nasal orifices, and encroaching on the upper lip. The tongue, gums, tonsils, fauces, uvula, and the mucous membrane of the pharynx were coated in their entire visible extent with a tough tenacious substance of a dirty grey appearance. Having tied a handkerchief over my mouth, to prevent the possibility of its receiving any ejecta, I explored my patient's throat with the aid of a strong light. Observing a ragged edge of membrane on one of the tonsils, I took hold of it with forceps and easily stripped off a scrap of the unmistakable diphtheritic pellicle. The pulse was very feeble, and the extremities were cold. The intelligence was unaffected. He said that the pain, which for some days had been considerable in the throat, was gone, and that his only present distress was want of air. No words were required to tell me that intense air-hunger—to Anglicise a graphic expression employed by German physicians—was the immediate source of his distress. During my visit, which lasted nearly two hours, I had ample opportunity to make this and all other necessary observations.

The treatment I adopted was the immediate administration of a wine-glassful of port wine and the application of turpentine stupes to the legs. I wrote a prescription for the glycerate of borax and the compound tincture of cinchona of the *British Pharmacopœia*, and waited their arrival. I smeared the whole of the diphtherically coated surfaces with the glycerate, and gave two drachms of the tincture in a second glass of port wine. Before leaving the house, I unreservedly stated the extreme gravity of the case, and in particular mentioned that at any moment the operation of tracheotomy might be required to prevent closure of the air passage by the rapidly forming membranous exudation. The child was in a decidedly less alarming state, in respect to immediate danger, than when I arrived.

I returned at ten o'clock. There was not then any apparent increased urgency in the symptoms. The mother fancied that the child's condition had ameliorated; but this opinion rested only on the fact that there had been no renewal of the dyspnoeal paroxysm. A small quantity of urine passed half an hour before my return. On testing it by heat and nitric acid, I found it to be very albuminous. Under all the circumstances, I deemed it right to repeat the unfavourable prognosis which I had already given. I intimated to the mother and other members of the family that I looked upon the child's life as in great jeopardy; that the disease was diphtheritic croup, by which the entrance of air into the lungs was being rendered more and more difficult by the air-passage becoming more and more blocked up by the formation of false membrane on its mucous surface, as well as by a submucous effusion of serosity; that at any moment the operation of tracheotomy might become imperative, and that its being rendered unnecessary by a change for the better could hardly be expected. I represented strongly the propriety of a consultation with another physician, and the despatch of a telegram to acquaint the father, temporarily absent in London, of the extreme gravity of the child's illness. The consultation was agreed to at once; but, from incredulity as to the gravity of the case and an unwillingness to alarm an affectionate parent, the telegraphic message was not sent. Had I been absolute dictator of the course to follow, I should at this time have immediately performed tracheotomy. There was no sufficient reason for delay. Nevertheless, as the opposition to the operation on the part of the mother was very strong, and as there still remained a short period during which emetics and other measures might be watchfully though not very hopefully tried, I reluctantly consented to act energetically in another direction, and delay tracheotomy till it was sanctioned in consultation. Forthwith I administered an emetic in port-wine negus. Some of this potion was swallowed, though with considerable difficulty; a small portion of it was returned through the nose. In about half an hour, active vomiting was induced for two or three minutes, during which some shreds of thick tough false membrane were ejected. This was followed by a decided though very temporary amelioration, due, no doubt, to partial clearing of the air-passage and general reaction directly caused by the operation of the vomitive. The pulse became stronger, the respiration easier, and the face lost a good deal of its congested semi-purple hue. On leaving the house about eleven o'clock, I ordered a continuance of the frequent local application of glycerate of borax, and the internal use of wine and cinchona.

At six in the evening, I found the child somewhat stronger, and breathing quite as easily as when I left him at eleven. There had been no suffocative paroxysm during my absence. It was agreed that my next visit should be at midnight, and that at nine next morning

Dr. Benjamin Ball and I should meet in consultation. Till midnight, I directed a continuance of the treatment which I had laid down at my forenoon visit.

At midnight, I found that the temporary amelioration had ceased, and that the symptoms were even more alarming than I had yet seen them. The child had a semi-asphyxiated appearance, and breathed with great difficulty. The face was swollen and purple, and the neck was turgid. I sent a messenger to summon Dr. Ball, as it seemed very doubtful whether the operation could be delayed till nine next morning, the hour for which our consultation had been fixed. When Dr. Ball arrived, the patient was breathing much better. The only explanation of this change which suggested itself to us was that, in the terrible struggles for breath, portions of the laryngeal false membrane had become detached, and displaced in such a way as to allow a freer admission of air into the lungs. After an anxious consultation, Dr. Ball and I came to the conclusion that, as the family were exceedingly opposed to tracheotomy, and as there was a remission in the symptoms, we might delay the operation yet a little longer.

October 25th. At nine o'clock, Dr. Ball and I met in consultation. We urged the operation as an immediate necessity, but without success. There being no increase in the urgency of the symptoms, we agreed to delay, and meet again at nine in the evening to decide the question. Several times during the day, I paid short passing visits, and on each occasion found matters getting worse and worse. At nine, when Dr. Ball and I met, we felt that there was no time to lose; the child was becoming asphyxiated. We insisted on immediate operation, or, if time permitted, a consultation with some eminent authority in such cases. We suggested that Dr. Jules Simon should be summoned at once, and before ten o'clock we were in consultation with him at the patient's bedside. He thought that the operation had been too long delayed, and strongly expressed himself to that effect to the mother, who, looking at her child, then fearfully struggling for air, fully surrendered to us. We told her that, without immediate tracheotomy, the child must inevitably die within less than an hour, perhaps much sooner; that it might be saved by the operation. We also said that, on the other hand, it might die ere the operation were completed. In so speaking, we did not exaggerate the gravity of the situation.

Dr. Jules Simon operated at 10 P.M. There was an immense flow of blood during the operation from the congested veins. The wound being freely held open for half a minute, large portions of false membranes were forcibly expelled by the expired air, and other large shreds were drawn out of the trachea by the forceps. Immediately before and also during the operation, a favourable issue seemed very improbable. No sooner, however, was the tube inserted, than the loss of blood ceased and the symptoms of asphyxia disappeared. After the administration of some port-wine negus, the child fell asleep. I remained with him. He awoke in an hour, from portions of detached false membrane choking up the tube, and thereby inducing a momentary return of the asphyxial symptoms. Without taking the tube out of the trachea, I was able to clear it perfectly by dragging out large pieces of membrane. I remained with the child from the time of the operation till seven next morning. During the night, he slept a good deal, and took a fair amount of beef-tea, alternated with port-wine negus, to which latter a teaspoonful of the compound tincture of cinchona (*Brit. Ph.*) was twice or three times added.

October 26th, 1 P.M. Drs. Ball, Simon, and I met in consultation. There was some subcutaneous emphysema around the operation-wound. A bright rubeolar eruption was conspicuous on the trunk and on the legs. This eruption was faintly visible early this morning. The urine was intensely albuminous. The pulse was 120; the temperature was 37.8. Shreds of false membrane were at this time being constantly got rid of through the tube. A mixture of perchlorate of potash and tincture of the chloride of iron was prescribed. Very little of this mixture was ever taken, the patient's mother objecting to ferruginous medication, which, she said, did not agree with her family.

October 27th. At my first visit (7 A.M.), I found the condition not quite so favourable. There had been some cozing of blood from the operation-wound, the edges of which were coated with diphtheritic pellicle. The urine was intensely albuminous. The pulse was 120, very feeble. The temperature was 37.8. At noon, his state was very similar. At 10 P.M., there was a still feebler pulse. The greatest difficulty had been experienced during the day in administering aliment. He was evidently in urgent want of his beef-tea and brandy, and yet he either would not or could not swallow a drop of either. Under these circumstances, I resolved to remain with him some hours of the night. Forthwith I had administered an enema of beef-tea and brandy. I left him for nearly two hours. On my return, he had another similar enema.

October 28th. About three in the morning, I was slumbering on a

sofa which commanded a full view of the patient, when I was aroused by the cries of his attendants and a strange noise proceeding from the patient. He was cold, comatose, and convulsed. In an instant, I withdrew the cannula, which was choked up with mucosity and membranous shreds; whereupon respiration was re-established, and a large quantity of frothy mucus expelled through the wound. The cannula was then replaced. The breathing was so feeble, the pulse so weak, and the surface so cold, that I feared the worst. A large cataplasm of mustard and linseed to the chest, turpentine stupes to the legs, and an enema of beef-tea and brandy, were all quickly resorted to. In about an hour or an hour and a half from the time I was aroused, Dr. Jules Simon (whom I had at once sent for) arrived. The child had then very nearly recovered from the critical accident which has now been described. The day passed without the occurrence of any noteworthy incident, except that once the tube was taken out and cleared of the mucosity by which it had again become clogged. At 5 P.M., the pulse was 116; the temperature was 38 cent. (100.4 Fahr.); and the urine still very albuminous, though decidedly less albuminous than it had been since the 26th.

October 29th. In the morning, an amelioration in the state of the patient was observable. The pharynx, nostrils, and operation-wound, were for the first time since the operation free from diphtheritic pellicle. The cervical emphysema and the rubeolar eruption had both disappeared. For an hour, the cannula was withdrawn. For the last two days, the patient had taken an abundant and varied supply of stimulants and aliment, consisting of champagne, brandy, beef-tea, and pounded raw meat with its juice. He had, however, no desire for food. There was great wasting of the body. At noon, the pulse was 96, and the temperature 37.7 cent. (99.8 Fahr.) There was observed at the same hour a notable diminution in the quantity of albumen in the urine. The urine examined was passed at 10 A.M. At my subsequent visits at 7 P.M. and 11 P.M., I found that there was a return of the fever. At seven o'clock, the pulse was 124, and the temperature was 38.8 cent. (102.8 Fahr.) Some urine passed about 10 P.M. was much more albuminous than that passed at 10 A.M.

October 30th. The patient passed a tranquil night. This forenoon, he remained without the cannula for more than an hour. During the day, the breathing became oppressed; and, on examining the chest, the respiratory murmur in the right lung was found to have become feebler. At 9 P.M., I found that the condition had somewhat ameliorated since the morning. The dyspnoea and feebleness of respiratory murmur in the right side had not increased. The urine passed during my visit was rather less albuminous than some which had been passed five hours previously and kept in a separate vessel. The pulse had fallen from 120 to 104; and the temperature was exactly the same as in the morning—viz., 38.8 cent.

October 31st. He passed a good night. At 1 P.M., the pulse was 104, and the temperature was 38 cent. (100.4 Fahr.) During the greater part of the day, he remained without the cannula. He was stronger. The alimentation had been diligently and successfully carried out. In the right lung, the respiratory murmur was very coarse.

November 1st. He passed a good night. He was the whole day, except an hour, without the cannula. The breath-sound was still rude in the right lung; but there was a return of air to the smaller tubes. There was a considerable sero-sanguinolent flow through the operation-wound, the edges of which had a healthy appearance.

November 2nd. The night was disturbed, but nevertheless his condition had improved. The pulse was 88, and firmer; the temperature was 37 cent. (98.6 Fahr.) The right lung much less engorged. The operation-wound was contracting. The child breathed through the larynx and the nose. The urine was still highly albuminous; but the quantity of albumen it contained was now insignificant, when compared to that which it contained some days ago. It then became a semi-solid mass when treated with heat and nitric acid.

November 3rd, 4th, and 5th. Three days of progressive amendment followed, during which the pulse varied between 84 and 88, and the temperature (often taken) was never found above 37.8 cent. (100 Fahr.), and was generally about 37.2 cent. (99 Fahr.) The urine, tested twice or thrice in the twenty-four hours, contained a constantly diminishing amount of albumen till the afternoon of the 5th, when not even a trace could be detected. During these three days, the child was without the cannula.

November 6th. The improvement continued. The child slept well and much. He took abundance of suitable food with appetite. He could blow out a candle, and speak in a low voice. The operation-wound was very nearly, but not quite, closed.

November 7th. For the first time, the child left his bed, and took his meals sitting at a table beside the fire.

December 1st. The child being nearly quite well, daily attendance

had lately been discontinued. He spoke in a natural manner. The tracheal wound was solidly closed, and the strength was steadily returning.

The medical and hygienical treatment after the operation consisted in good varied alimentation, pepsine being given with the food; a liberal employment of wine and other alcoholic stimulants; the maintenance, day and night, of an equal temperature in the room, the atmosphere of which was kept moist by steam from a tin basin of water, below which a spirit-lamp was burning. I ought to add, that the room was spacious, and the house situated in an airy locality adjoining the Champs Elysées.

December 24th. The child had now regained sufficient health and strength to walk out, sleep, and eat very much as before his illness. He was, however, very thin. About November 20th, he was observed to be weak and languid, but in no way paralysed. On November 24th—about five weeks after the operation—paralytic symptoms were manifest. The child had a curiously restrained or rather contracted appearance, in consequence of the head falling forward and the shoulders being twisted. There was internal strabismus of the left eye. By an effort of the will, he could raise his head, but was unable to correct the squint. The pupils were equal. The third and fourth pair of nerves were not affected; the sixth pair only was paralysed. The power of accommodation was lost. He had no difficulty in swallowing, nor had he any paralytic symptoms whatever, except those now described. By the advice of Dr. Galezowski, a solution of eserine was dropped into the eye. Ferruginous tonic treatment, which had already been resumed, was continued. After fifteen days, the paralytic symptoms which I have described had entirely disappeared, and no form of paralysis afterwards manifested itself. The patient, twelve months after the operation, was in perfect health.

CASE.—In the spring of 1873, I was consulted by A. B., a gentleman aged 30, under the following circumstances. He came to my house from his hotel in a carriage, into which and out of which he told me he had got with great difficulty, arising, he said, from "rheumatism and weakness of both legs". He attributed his condition to cold and fatigue ten days previously, on his journey from Florence to Paris. In this opinion, he thought he was confirmed by having some cough and sore-throat since his arrival in Paris, and at least a week before his limbs began to fail. He complained of dysphagia almost amounting to an inability to swallow liquids, and of being unable in the morning to see well enough to read the newspaper. After a good dinner and some glasses of sherry, he said, he could read print quite well. When he told me that he had just recovered from a very severe illness before he left Florence, I naturally and correctly concluded that the malady from which he had suffered in Florence was diphtheria, and that the paralytic symptoms which had supervened in Paris were ordinary sequelæ of the primary affection. He informed me that his diphtheritic attack in Florence had been exceedingly severe in respect to the prostration of strength, but that the pellicle had not extended, he believed, from the pharynx into the larynx. The disease, in other words, had stopped short of croup.

For the first few days under my care, the symptoms decidedly increased in severity. He was then taking cinchona and extract of nuxvomica. That medication was discontinued, and, in place of it, Orezza water was prescribed. I directed it to be mixed with his wine at luncheon and dinner. He was unable to bear this strong ferruginous water, and discontinued its use after two days. Increasing dyspepsia now intervened, and seriously interfered with his alimentation. The paralytic symptoms continued, but did not acquire greater intensity; in some respects, they were less intense. He was falling into a very depressed state of mind and body, when, about ten or twelve days after he came to me, I ordered him to take before his principal meals a pill containing three grains of pepsina porci, one grain of the saccharine carbonate of iron, and one grain of salicine. Under the use of these pills and a generous diet of varied meats, vegetables, and wine, he rapidly improved, and entirely recovered within four weeks from the day on which he first consulted me. He then left Paris, and I have not since heard of him.

Before deducing conclusions from the illustrations of diphtheritic paralysis now given, other kindred classes of facts claim attention.

In studying paralysis frequently associated with, and consequent upon, diphtheria and fevers, it is necessary to take an enlarged clinical view of kindred affections. We must bear in mind that paralysis, in various forms and degrees, is an occasional sequel of the exanthemata, of various specific fevers, of dysentery, and of some other maladies, among which I particularly refer to the morbid state commonly called hysteria.

In the *Gazette Hebdomadaire de Médecine* for 1859, Dr. Landry published an account of a case of generalised paralysis which set in during convalescence from pneumonia and terminated in death. The case occurred at the Hôpital Beaujon of Paris, in the wards of Professor Gubler,

Dr. Landry's narrative is followed by remarks of Professor Gubler, which conclude by a statement to the effect that a paralysis similar to that which occurs as a sequel of diphtheria may supervene as a secondary result of numerous maladies very different from one another, but all producing exhaustion of the nervous system, impoverishment of the constitution, and a lowering of organic power—conditions favourable to the production of permanent disorder of the innervation. On the appearance of this case, Dr. Macario of Nice laid claim to priority in a communication published in the *Union Médicale* of Paris for Nov. 8th, 1859. He there gives the details of four cases of pneumonic paralysis. Dr. Macario's cases are given in his work on *Dynamic Paralysis*, which received a meed of honour from the Academy of Sciences of Montpellier, and was published in the *Bulletin Général de Thérapeutique* for December 1850. Many authors, writing before and since that date, have described cases of pneumonic paralysis. To priority in the publication of such cases, Professor Gubler lays no claim. The important claim to priority which he does put forth is thus expressed: "Le seul mérite que je puisse revendiquer est d'avoir le premier, je crois, élevé au rang de fait général la production des paralysies généralisées comme effet secondaire de toutes les affections de courte durée, vraiment dignes par leur intensité du titre de *maladies aiguës*." He explains that, under the term "acute diseases" (*maladies aiguës*), he includes only the diseases properly designated fevers and the inflammatory diseases accompanied by fever. Professor Gubler has, I think, succeeded in establishing his proposition that all the diseases embraced in his restricted category of "acute" may induce local or general paralytic affections during their evolution and after the cessation of their active manifestations.*

A similar opinion is expressed by Dr. E. Fritz in his valuable work on the different symptoms referable to the spinal marrow which frequently occur in the course of typhoid fever. He strongly dissents from a view put forth by Drs. Lombard and Fauconnet of Geneva, to the effect that typhoid fever, to the exclusion of other acute diseases, possesses a monopoly of spinal symptoms. He admits that, in various forms and degrees, they (including paralytic affections) occur in the course of, as well as during convalescence from, erysipelas, pneumonia, pleurisy, and bronchitis.†

[To be continued.]

ON PLEURITIC EFFUSION.

By JOHN RICHARD WARDELL, M.D., F.R.C.P.,

Physician to the Tunbridge Wells Infirmary.

[Concluded from p. 705 of last number.]

THE foregoing rules of treatment have been given for those cases in which urgent symptoms do not exist to demand a more speedy removal of the effusion, and when the slower process can safely be tried. But there are many examples of this complaint, when, from various reasons, other and more effective means cannot be delayed. I, therefore, now approach the consideration of that which is by far the most important remedial measure in pleuritic effusion, viz., *paracentesis thoracis*. It would be out of place here to enter into any lengthened detail of the history of this operation, as much information has been latterly given by others on this head, and *thoracentesis* has been supported by far more advocates than it formerly attracted. In passing, it may be briefly observed, that paracentesis has been practised from very remote ages, having, like many therapeutic agents, been at times almost abandoned, and then having been had recourse to again. We must go back to the school of Hippocrates for the chest having first been punctured; and it is strange that the great and manifest benefits which result from this, a comparatively simple operation, and really an operation attended with little or no danger, should have not been rendered more available. Hippocrates describes the symptoms which necessitate the perforation of the chest, but the father of our art had not the preciseness of diagnosis which discoveries and accumulated experience have given to the modern physician. The Hippocratic schoolmen knew not the difference between hæmorrhagic, purulent, and hydrothoracic effusions, nor yet between these and pneumohydrothorax. They relied upon succussion. The physical signs, which to us are exact exponents of the hidden state of things, were to them unknown. Galen merely followed Hippocrates. Celsus gives the operation no prominence. In fact, the Greeks, Romans, and Arabians, allowed it to fall into desuetude. In the sixteenth century, that epoch renowned for the revival of science, as it is renowned for the culmination of letters,

opening the chest was once more brought into notice. Fabricius advocated paracentesis, and observations made on penetrating wounds strengthened arguments in its favour. Bontius and Bartholin took up the question, and much was said relative to the introduction of air into the pleural cavity. In the seventeenth century, Gerome Goulu, Zacutus Lusitanus, Willis, and Lower, mention cases of paracentesis. About this time, Drouin used a trocar, and a hundred years later, Leirde advocated the use of the same instrument. The introduction of the trocar was, however, withheld, from a false fear of penetrating the lung. It could not be decided, as we can now decide, when the lung is in juxtaposition with, or when it is pushed away, from the chest-wall. The discovery of Laennec conferred a certitude in this as it conferred a certitude in many other points in thoracic pathology, and a sure and an enduring basis was laid for the more extended employment of thoracentesis; in fact, the stethoscope inaugurated a new era in the treatment of pleuritic effusion. At the beginning of the present century, the evacuation of liquid from the pleural cavity was rarely ever had recourse to. A few sparsely narrated cases may be found in medical literature, but the great usefulness of this expedient had no hold on the general professional mind. Not only, as I have already remarked, was there a dread of penetrating the pulmonary substance, but there was a dread of fatal syncope, and a dread of the admission of air into the sac. Hamilton Roe, in his excellent monograph, which did much good service in recalling attention to this question and to the re-establishment of the operation, remarks that Boyer, Dupuytren, Cooper, Laennec, Gendrin, and Stokes, were opposed to it. Such high names would doubtless weigh with many, and form no mean barrier to the progress of this potent remedial measure. To Roe, Davies, Trouseau, and Hughes, and, it may also be said, to Bowditch and Morill Wyman, is mainly due the credit for having brought into comparatively common practice the puncturing of the chest-wall, and thus the observance of a curative means which can hardly be over-highly estimated, as it is beyond all dispute that many lives are now saved which even twenty years ago would have been sacrificed to inertness and the let-alone treatment.

Paracentesis thoracis may be contemplated in reference to two objects being attained by its use; and these are, when a curative and when a palliative result is expected. We sometimes have recourse to it when recovery seems out of the question, and when there are such complications as to indicate an approaching fatality. It may then be the means of affording relief to urgent suffering, as when there is dyspnoea with threatening of orthopnoea, and also of extending life. In those instances in which we hope for a cure, it should always be held in mind that the success of the operation must greatly depend upon the condition of the system generally, upon the amount of strength, and the state of the visceral organs. Louis long ago pointed out this fact to be held in view. Impairment of the digestive and assimilative functions retards the well-doing of the patient; and, if there be renal disease and a lowered tone in the vital powers, the issue becomes very doubtful. It is beyond dispute that it is, like tracheotomy, far more successful when employed early than when employed late; as I have already remarked, before false membranes and fibrinous deposits bind down the lung and become organised. It is generally difficult to determine the precise time when operative interference should be tried. There is mostly a desire, not only on the part of the physician, but on the part of the patient, to give other and milder remedies a chance. If this waiting for the effects of medicines be protracted, much valuable time may have been lost. It is well that the inflammatory and more acute symptoms be first subdued. Hamilton Roe thought the fluid should not be left beyond the third week, as he believed that no real cure resulted if it were deferred until the fifth or sixth week; and Tuke of New York believes that re-expansion of the pulmonary substance may take place even at the end of between two and three months. There is, however, no occasion to wait such length of time when we see the patient from the setting in of the acute stage. But it often happens that cases go on for weeks before a decision is come to as to the operation. Absorption has been waited for, or, what not unfrequently occurs, the presence of the fluid has been overlooked. Sometimes it accumulates in an insidious manner, and I have known instances where effusion has long existed without any suspicion whatever of any collection in the pleural sac. I believe that no hard and fast rule can be laid down as to the period when the lung will re-expand; its expansion is dependent on many circumstances. When we know the fluid to be purulent, as may be ascertained by a grooved needle or the aspirator, there need be no hesitation in our resolve. It would be sheer folly to lose any time after such fact was demonstrable.

I have remarked that two fears have been entertained which have opposed the more general use of thoracentesis; and these have been the fear of syncope following the operation, and the fear of the admission of

* Gubler (Adolphe): Des Paralysies dans leurs rapports avec les maladies aiguës, et spécialement des paralysies aësthéniques, diffuses, des convalescents. (*Archives Générales de Médecine*: 1860.)

† Fritz (E.): *Etude Clinique sur Divers Symptômes Spinaux observés dans la Fièvre Typhoïde*, 8vo, pp. 186. Paris: 1864.