

and turpentine fomentations. In the evening, he was feverish; but the pain was somewhat less.

On the following morning, his condition was as follows: Pulse 120; respirations 32; skin very hot and dry. The tongue was coated with white fur. The pain in the side had increased, and there was tenderness on pressure. There was no cough; but a good deal of dyspnoea. There was good movement on both sides of the chest. *At the lower and back part of the left lung, the respiratory murmur was peculiarly loud and harsh; but there was no crepitation.* He was ordered a grain of opium three times a day, with a tenth of a grain of antimony every four hours; and for food, beef-tea and milk.

On the 10th, the pain had almost gone. The pulse was 104; the respirations were 28. The medicine had produced vomiting and purging. The physical signs were as follow: There was deficient movement of the left side, and dullness at the left base. There was crepitation over the lower half of the left lung. The mixture and pills were stopped, and the following was prescribed.

℞ Vin. ipecac. ʒij; tinct. opii ʒj; mixture camph. ʒvj. Cap. ʒj 4tā quaque hora.

On the 11th, the pulse was 106; the respirations were 26. The pain had returned in the night, and was again severe. He had expectorated a small quantity of tenacious mucus. There was less crepitation. The respiration was distinctly tubular at the base of the left lung, with strong bronchophony. A blister was ordered; and two drachms of antimonial wine were added to the mixture.

On the 12th, the pulse was 100; the respirations were 24.

On the 13th, the pulse was 96. There was slight dullness at the back of the left lung, with abundant moist crepitation. Six ounces of port wine daily, and a carbonate of ammonia mixture were ordered.

On the 15th, there was no dullness at the back of the left lung; but crepitation was audible.

On the 16th, the patient was quite convalescent, and able to take meat diet.

On the 17th, he was ordered quinine. He did not recover his strength very rapidly; but steadily improved under the influence of good diet and quinine and iron.

He was discharged well on September 7th.

[To be continued.]

THE HOLBORN UNION. Last week, at the meeting of the guardians of the Holborn united parishes, the letter of the Poor-Law Board, on the late inquiry on the death of Timothy Daly, came on for consideration. A desultory conversation arose on this letter, and on the recommendation of Dr. Carr, the medical officer who assisted Mr. Farnall; namely, that the drugs should be found by the parish, and that the medical officer's salary should be raised from a £100 a year to £150. It was stated this would be a double "rise," as the medical officer now has to find the drugs out of his salary of £100, and two or three of the guardians were of opinion that the salary of £100 was sufficient, as the surgeon had fees which amounted to upwards of £50 a year additional. After a long discussion, it was resolved to recommend the Board to reconsider the whole subject of the medical relief, both indoor and out. On the motion of Mr. Cullen, it was carried that the clerk should write to Mr. Norton and convey to him the censure of the Poor-Law Board, with the expression of a hope that in future he would attend to his duty in respect to keeping the books.

Original Communications.

ON THE PHYSICS OF DISEASE, AND THE PHYSICAL PATHOLOGY OF THE BLOOD.

By BENJAMIN W. RICHARDSON, M.A., M.D., Senior
Physician to the Royal Infirmary for Diseases
of the Chest.

Note on the Paper of Mr. Rhodes on Vital Force.

MR. RHODES, in the excellent paper which he published in the JOURNAL of February 4th, has done me the honour to refer to my views on "vital action." In making his remarks, Mr. Rhodes has evidently misunderstood my meaning on two points, and I would, therefore, offer a brief explanation.

1. In speaking of heat as the means of motion in the organism, I do not use the word as specific, but as indicating simply a form of motion; and I am quite ready to agree that the force that is absorbed or laid by in the nervous system is simple motion. At the same time, I feel that the motion produced or evolved in the body is due to the oxidation of carbon, and is primarily manifested or made tangible in the form of heat, or, more correctly speaking, caloric. In other words, the oxidation of carbon is sufficient to produce all the phenomena of animal motion.

2. I agree that the motion conveyed to the nervous system by the blood is communicated not to the nervous centres alone, but to the nervous periphery and to every part of the nervous system which the blood enters; and I would do away altogether with the term "current of nerve-force" as it is usually applied. In my Lettsomian lectures, delivered four years ago, I very carefully considered this point, and was, I believe, the first to point out the communication of motion to nerve at the periphery and in every part. Mr. Rhodes will find a full account of this view in the *Transactions of the Medical Society of London*; but I quote a passage or two in full.

"According to the view I hold, I should infer from all the phenomena observed, that the nervous system is in every part a producer of the peculiar force with which it is endowed; not that the brain or ganglia are special producers; not that a current from these centres, intermittent or continuous, is traversing the nerve-fibre; but that the nerve-structure, so long as it is supplied with blood, is producing the force wherever there is nervous filament. I look on the vast area of nerve-fibre in the peripheral surface; and I see in it a mass equal to that of the brain; I see this mass supplied with blood everywhere, and built always on the same plan. I assign to it everywhere the same purpose and labour.

"In this sense we may look on the muscular system as an entire independency, and on the nervous system also as an entire independency. The muscular system, nourished by blood and charged with caloric as caloric; the nervous system, nourished everywhere by blood, and charged also with caloric in its electrical modification; each are independent systems. We conjoin the systems, and the result of their equilibrium is a simple passive state, while the

result of a disturbance of their equilibrium is motion and sensation.

"Thus, as every portion of nerve down to the minutest branch possesses producing power, the mass of the force generated is so universally distributed, that interference in any part of the nervous communications is reflected to the whole nervous system. So when our distinguished brother, Dr. Brown-Séquard, produces artificial epilepsy, and induces the paroxysm by irritation of some particular external point of nerve, he does, in fact, in that irritation touch at one presenting point the universal fluid pervading the whole body of his subject, and excites, not by special transmission, but by general disturbance of the equilibrium of the forces, a convulsion through the whole muscular organism. So, when with the intermittent current I galvanise a portion of the nervous tract, I produce convulsion, because I induce an alternation of force; at one moment allowing the natural equilibrium to establish itself; at the next moment disturbing it. So, when I continue the current without intermission, I virtually cut off altogether the included nervous tract from its system and cause paralysis of will, because I have cut off also communication with the brain; but I can nevertheless call into play at pleasure the excitability of the nerve-trunks below, as long as they continue to summon into their service blood for their nourishment and force-producing faculty.

"If it were possible to entirely remove from the body every muscular fibre, and, leaving the nervous system entire, still to supply that system with blood and surround it with those conditions under which its blood could be applied; that nervous system would exist as a motionless intelligence. It might think, feel, and by virtue of its sensual organs appreciate and know the external world surrounding it; yet be incapable alike of act or of expression. On the other hand, if every particle of nerve-matter could be removed, the muscular system being left with its attachments to bone still secure, and its blood-current free; that muscular system would remain an unintelligent mechanism, having in itself its *vis insita*, but feeling incapable of exerting movement until brought into action and guided by the intelligent part of a more perfect animal.

"By the combination of the two systems in the perfect organism we obtain, so long as the necessary conditions for life are supplied, the doubly endowed and self-acting body. An excitation of light refracted on the nervous expanse of the retina touches the pervading force, and the animal sees; but this light must be presented to the nerve-expanse, or, in other words, to the force that pervades the expanse, in such way that the absolute physical picture shall be put upon it, or the picture will not be seen. It is not that the picture is to be carried to the brain, but that it is to be looked on at this point of the nervous expanse by the presiding force. A vibration is set up in a mere physical membrane, spread above another distribution of nerves, and the animal hears; it is not that anything is conveyed specially to the brain, but that the equilibrium of the pervading force is disturbed. An impression is made on the skin, and the animal feels; it is not that any current is conveyed to the brain, but that the impression disturbs the balance of the nerve-fluid throughout its universality. The impression made is slight, and it is pleasant, or not painful; it is severe, and it excites the whole animal body, so that the body writhes in agony, and may even die from the reflection of the impression upon the muscular fibre, and the resultant spasm."

RETROSPECTIVE NOTES ON OUT-PATIENT PRACTICE.

By C. M. DURRANT, M.D., Physician to the East Suffolk and Ipswich Hospital.

DIGESTIVE SYSTEM. (Continued from p. 141.)

11. *Intestinal Worms.* The only varieties of intestinal worms that have presented in the last two years, are the *trichocephalus dispar* or long thread worm, the *ascaris vermicularis* or short thread worm, and the *tania solium* or common tape-worm. We have had occasional examples of the large round worm, the *ascaris lumbricoides*, but no case has occurred during the period to which these notes refer. The variety that has obtained most frequently, is the small thread-worm. These have existed in adults as well as in children.

In the treatment of ascarides, the use of injections will generally be successful; but in out-patient practice, the adoption of this measure is often attended with much inconvenience. I have generally depended upon calomel and scammony as a purgative, giving as medicine infusion of quassia with chloric ether. If this plan fail, which it has seldom done, the injection of common salt, or the infusion of quassia, with the tincture of the sesquichloride of iron, should be tried.

In the *tania* cases, I have been well satisfied with the employment of the oil of male-fern. I have usually ordered a full dose of castor-oil to be taken the morning previous to administering the specific remedy. The patient should be directed to limit the quantity of food taken during that day; and on the following morning one drachm or a drachm and a half of the fern oil is to be taken, suspended in mucilage, and on an empty stomach. This plan, repeated twice a week if necessary, for three or four doses, has effected the expulsion of the worm; which, either whole or in portions, is generally brought in triumph by the patient on the next visiting day.

Ether in large doses has lately been recommended by M. Lortet as a remedy for *tania*. His mode of giving it, and the dose, will be found in our JOURNAL for January 21st. With a view to prevent the recurrence of the worm, the patient should be directed to abstain from eating pork, or, if he take any, it should be of the best quality and thoroughly cooked. The raw hams, eaten so largely in Germany, are a fruitful source of *tania*. The tincture of sesquichloride of iron with quassia may be taken for a time with advantage, and if the slightest suspicion of the re-formation of the parasite exist, the oil of male-fern, preceded by castor-oil as before, should be at once administered. It may be sometimes noticed that tape-worm becomes, as it were, epidemic within a certain locality, and then disappears, not to be seen again perhaps for a lengthened period. This fact may be explained by the researches of Küchenmeister and Von Siebold, who have shewn that the *cysticercus cellulose* of the pig and sheep is the same parasite, in a different stage of development, as the *tania solium*. Hence, if the former have existed largely in the flesh of those animals in any particular spot, it is easy to understand the comparative frequency of tape-worm at one time, and its almost entire absence at another.

12. *Dysentery.* Only three well marked cases of dysentery have applied as out-patients in the past two years. In one of these, the disease was traceable to a residence in the West Indies. In a second, it first shewed itself during a sojourn in Canada. In the third, the exciting cause was, I believed, attributable to exposure to cold and moisture acting upon a