

difficult to understand how Hyrtl could have arrived at such opposite conclusions. The most probable view is that he injected hearts recently removed from the body. The only failure which I experienced was with a heart injected as soon as removed. In this the injection failed to run over more than quite a small portion of the heart, not even over the whole of those parts to which the coronary artery injected was distributed. All the hearts, except this one, were macerated for some time in water, in order to get rid of all the blood-clots which might be in the vessels in the recent state. When this precaution is taken success is certain.

Wimpole-street, W.

THE CAUSATION OF CARDIAC AND PULMONARY DYSPNŒA IN DISEASES OF THE HEART.

By CHARLES STONHAM, M.R.C.S. ENG.,

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IN advanced cases of valvular disease of the left side of the heart in which there is want of compensation and pulmonary congestion with deficient oxygenation of the blood, dyspnœa is a prominent and very distressing symptom. The so-called pulmonary dyspnœa is persistent, and hitherto has been regarded as the consequence of pulmonary congestion with œdema of the lungs and pleuræ. That these two conditions do certainly produce difficulty of breathing there can be no doubt, but I shall hope to show that there is a third cause constantly at work aggravating the condition, and moreover that this cause under certain conditions produces the paroxysms of cardiac dyspnœa. Attacks of dyspnœa, often of great severity, also occur from the impaction of an embolus in the lung, especially if it is of large size, but in such cases there is frequently a rigor, with high fever, pain in the side, and bloody expectoration. Such attacks are entirely different from those now under consideration, which occur just as the patient is dropping off to sleep. In its general characters the paroxysm simulates an asthmatic attack, but the breathing is more "panting" in character. The hypodermic injection of morphia ($\frac{1}{2}$ or $\frac{3}{4}$ gr.) at once gives relief, which is maintained for several hours afterwards. As yet this cardiac dyspnœa has not received any satisfactory explanation. Dr. J. Milner Fothergill, in his work on the "Heart and its Diseases" (2nd edition, p. 91), speaking of cardiac dyspnœa, says:—" . . . it is certainly connected with the descent of the diaphragm, and is occasioned by flatulence and fulness of the abdomen. In the horizontal position the contents of the abdomen press upon the diaphragm equally with the other portions of the abdominal walls; in the erect or sitting posture they fall away from the diaphragm by their own weight. Dr. Lauder Brunton teaches that in the supine position the diaphragm has to overcome the action of the abdominal muscles; when up only lateral pressure is called for. It is not suggested that this mechanical explanation is the full and complete explanation of orthopnœa." Now, in the first place, if flatus and distension play any part in the production of cardiac dyspnœa, why does it occur when the patient is dropping off to sleep? Surely sleeping does not cause flatulence? And, secondly, with regard to position, cardiac dyspnœa certainly occurs with very great severity in patients who cannot lie down at all; but, at the same time, it is quite conceivable that this may play a part in its production, although, I should imagine, a very insignificant one.

With regard to Dr. Lauder Brunton's theory, it may be remarked that the abdominal muscles during orthopnœa, instead of hampering the action of the diaphragm, really help it, since they become indirectly inspiratory by fixing the lower ribs, and so allowing a more fixed point for the diaphragm to work from. And, lastly, I cannot see why morphia should act so quickly and beneficially if the above explanations are at all correct. We know from physiological experiments that the respiratory centre in the medulla oblongata is stimulated by the circulation of venous blood in it, and furthermore that it is the lack of oxygen, and not the excess of carbonic acid, that is responsible for this. Now, in those cases of heart disease in which cardiac dyspnœa is present there is pulmonary congestion; the

blood generally is more venous than natural. This blood circulating in the medulla acts as a stimulus to it, and hence it is in a constant state of excitement, and more vigorous respiratory impulses are generated. I would submit that this condition of excitement of the centre combined with the congestion and œdema of the lungs, is the real cause of pulmonary dyspnœa.

Now, what further causes come into play in producing a paroxysm of cardiac dyspnœa? Firstly, let us inquire what happens during sleep, and then see if any changes occurring could influence the respiratory centre in any way. Sleep is brought about by cerebral æmæmia, and hence the respiratory centre is less supplied with blood than during the waking hours, and therefore the oxygen going to it is still further lessened in amount, and the state of excitement is accentuated, and as a result the centre, which was before just kept within bounds, now breaks loose, so to speak, and a paroxysm of cardiac dyspnœa ensues. This explanation of the phenomenon is also borne out by the effects of treatment with the hypodermic injection of morphia. Morphia acts as a nervous sedative, lessening the irritability of the whole nervous system, central and peripheral, so that a greater stimulus is required to call forth any action. The irritability of the respiratory centre would accordingly be lessened, and hence the stimulus of the venous blood would not call forth such vigorous respiratory impulses. The dyspnœa would be relieved. Cheyne-Stokes' respiration, met with in cases of fatty degeneration of the heart, and sometimes in cerebral and renal diseases, has also been attributed to a want of oxygen. Professor Laycock thinks it is due to a sentient paresis of the respiratory centre not necessarily dependent on structural or other diseases of the heart, but Dr. Hayden goes further, and adds to this a want of oxygen; but Biot proved that the arterial circulation is increased, in some cases at least, during the apnœa, and not during dyspnœa. Traube held that it was due to over-action of the vagi by accumulated carbonic acid constantly stimulating their endings; this view is favoured by Biot.¹ Dr. Edis, however, says that this ascending and descending respiration is due to lessened irritability of the centre, so that carbonic acid is not sufficient stimulus.²

University-street, W.C.

REMARKABLE EFFECTS OF MASSAGE ON GASTRIC ASSIMILATION AND NERVOUS DEBILITY.

By J. BERESFORD RYLEY, M.D.

WITH the exception of salicin and its compounds for rheumatic fever, there has not been, I venture to say, any therapeutic discovery of recent times so brilliant in its results as massage in the treatment of functional neurasthenia by Dr. Weir Mitchell of Philadelphia, and the profession is much indebted to Dr. Playfair for its systematic introduction into this country about two years ago. I was so struck at the time with his article on the subject in THE LANCET that I determined to give it a trial on the first opportunity, and for this I had not long to wait, inasmuch as a typical case presented itself for treatment shortly after. About the middle of June, 1881, I saw, in consultation with my friend Dr. Hine of Leytonstone, Miss A. C—, aged twenty-one, who for four years previously had been more or less a complete invalid. At the time of my visit she was much emaciated and very anæmic, had a small, sluggish pulse, and an extremely apathetic expression of countenance; her menstrual periods were very irregular and their character most capricious, being sometimes dysmenorrhagic and scanty, and at others profuse and painless. She had no appetite whatever, and for many months "had not taken sufficient food to keep a baby alive," her chief articles of diet being a little Nestlé's food or arrowroot and occasionally a few spoonfuls of beef-tea. The least particle of meat or vegetable gave her intense gastrodynia, which usually ended in noisy retchings until the offending matters were brought up. She had frequent attacks of dyspnœa, often followed by a kind of cataleptic swoon, which sometimes lasted for hours. For the last twelve months she had passed the greater part of her time

¹ Vide THE LANCET, vol. i., 1877, pp. 245, 481.

² London Medical Record, 1880, p. 15.

in bed, and almost exclusively occupied the services of a most self-sacrificing sister. "The doctor was never out of the house on her account," and the whole family were in a chronic state of alarm at the constantly recurring prospects of her speedy demise. I felt that it would be unwise to at once propose massage in a highly nervous case like this, and so, after temporising for a while, I gradually obtained the consent of the family to this mode of treatment, and for that purpose she was admitted into the Finsbury Home Hospital for Gentlewomen on July 13th. It is unnecessary for me to recapitulate the various steps of this proceeding, as they have already been so graphically described by the author in his little work, "Fat and Blood, and how to make it." It will therefore be sufficient for me to state that after the first week all her abnormal symptoms began to disappear with a rapidity that was truly marvellous, that at the end of the second she was eating and digesting a quantity of food that was almost incredible, and that she left the hospital within two months with an appearance of health, strength, and energy that astonished those who had known her previous condition. She gained flesh and colour rapidly under treatment, but I am sorry that I had not the means of ascertaining the exact amount of the latter.

The next case is that of a young married lady, twenty-one years of age, who had been under my care for some time for general debility, dyspepsia, and cervical catarrh, the results of a miscarriage eighteen months ago. She was a bright intelligent patient, and felt acutely her constant drawbacks to the enjoyment of an easy and pleasant social position. She had no symptoms or history of hysteria, and had been fairly strong until the time alluded to, but since then had gradually lost strength, was fatigued on the slightest exertion, and suffered intensely from acute gastrodynia without any apparently correlative cause. She made but very unsatisfactory progress towards recovery until she commenced treatment by massage on Nov. 10th, 1881, when the dyspeptic symptoms quickly disappeared, from which she has not since suffered, and she left the hospital within six weeks greatly improved in her health.

The third case I will briefly describe as that of a lady, thirty years of age, who had become feeble and dyspeptic from the conjoined effects of rapid child-bearing, menorrhagia, from subinvolution, and chronic ulceration of the cervix uteri. After a very protracted term of treatment, with but little reparative effort on the part of her constitution, the primary causes of her illness were nearly all removed, but she still remained in a very weak state, and suffered much from gastrodynia and the many other morbid symptoms of a feeble digestion. Medicines, and carefully carried-out dietetic rules, did her but little good, but in a few weeks, under the massage treatment, she improved rapidly; the thickly coated tongue became clean for the first time during my knowledge of her, and she left the hospital within a month, having made more progress during that time than almost the whole period anterior to it.

I feel that it would be wearisome to reiterate the history of all the cases that I have treated in this way; and so will content myself by expressing an opinion, founded on them, that in all cases of functional nerve prostration, and its various morbid consequences, massage will seldom fail to effect a rapid cure, and that its influence upon the assimilative and digestive functions of the stomach is especially remarkable; its effectiveness in other forms of disease has yet to be proved, but I am inclined to think that its application will have a much wider range than has at present been assigned to it, and that it will be supplementary to other treatment in most cases where long-continued rest is necessary. I am employing it at the present moment in this way with great advantage in a case of fibroid degeneration of the uterus, with severe and long-standing menorrhagia. The marked anæmia is rapidly improving under its influence, the flesh becoming firmer, and the appetite and digestion greatly increased. It appears to do good also in another way—namely, by employing the patient's mind, and thus relieving the monotony of the recumbent position when long maintained.

I think I have already borne sufficient testimony to the value of massage in all functional derangements of the nervous system, but I have two cases under my care at the present moment which are such striking examples of its efficacy that I will ask to be allowed briefly to record them.

One is that of a young lady, about twenty-three years of age, the daughter of a Norfolk clergyman, who was sent to me three weeks ago suffering from hysterio-epilepsy, with hysterical paralysis of a remarkable nature. She had been

the subject of epilepsy since thirteen years of age, and had had an attack at night for many months, at least once a week. Since beginning treatment there has not been a single seizure, and the hysterical paraplegia, with incontinence of fæces and urine, which prevented her from standing without assistance, has been so far relieved that she walked to church on Easter Sunday with one of the nurses. It may be said that ordinary treatment under bromide of potassium would have been as effectual, but though I admit that the epilepsy might have been equally well controlled by such means, I cannot think that so pronounced a paralytic symptom would have yielded in so short a time.

The other case is that of a maiden lady, thirty-five years of age, who I went over to Holland to see in consultation with Dr. Van de Noorda of La Hague, under whose care she had been for two years. She had also seen the celebrated Dr. Metza of Amsterdam, but all their remedies combined had failed to do her any good, and at the time of my visit she was getting rapidly worse, and had not left her room for more than a month. It appears that owing to over-study and too close application to her scholastic duties she had broken down and become so nervous and whimsical as to be a misery to herself and a source of worry and anxiety to all around her. The case was quite easy to understand—the old story of mental strain and nervous shock, without any physical disease whatever. I felt sure that massage and change of scene were the only means of saving her from the death or insanity that she believed would be the sole terminations to her sufferings, and with the consent of her friends and after a great deal of persuasion on my part she came over with me to London three weeks ago for that purpose, and is already able to walk about by herself, eat well, sleep better, and take an interest in life and her surroundings.

Finsbury-square, E.C.

NOTE ON MURUNGAI OR MURUNGAH.

By E. M. HOLMES, F.L.S.,
CURATOR OF THE PHARMACEUTICAL MUSEUM.

THERE can be no doubt, I think, that the plant known to Mr. P. S. Brito under the above names¹ is the *Moringa pterygosperma*, Gaertn. The name is variously written by different authorities, as Marung-gai (Waring), Moor-ingay (Jesudasen), or Mooringhy (Drury), and the specific botanical name is the Latinised version of the same word. My friend Dr. Ondaatje, of Ceylon, informs me that it is called the "drumstick" tree on account of the curious pod-like fruit, which when ripe is white, and bears some resemblance to a bone or short stick. The properties of the plant closely resemble those of horseradish, for which Dr. G. Bidie regards it as a perfect substitute.² On account of this similarity it is called by the Anglo-Indians the "horseradish" tree. The leaves, flowers, and immature fruits are sometimes used as a culinary vegetable, and are considered by the native doctors in India of value in the treatment of diseases of the liver and spleen. The juice of the fresh leaves is employed to hasten the suppuration of boils. The fresh root is rubefacient and even vesicant, but its application causes great pain. The decoction of the root bark has been given as an emmenagogue, but is said to be liable to produce abortion. The rubefacient and stimulating properties of the plant are also turned to account in the treatment of paralysis and leprosy, epilepsy and hysteria. A great deal more might be said about the medicinal properties of the plant, but all that could be adduced might be summed up in the above quoted opinion of Dr. Bidie. The plant yields a volatile oil, to which its properties are believed to be due. The oil has a very disagreeable odour, and is said by Broughton to be different from either oil of mustard or oil of garlic.

Dr. Ondaatje informs me that so far as his knowledge extends, and he has practised in Ceylon for thirty-six years, the leaves of the drumstick tree are never used in that island in the treatment of hydrophobia, nor is the plant known by its Malayan name, Marung-gai, nor its Tamil name, Mooringa, but by the Hindu one, Sohunjana. He is of opinion that the leaves would not have the slightest therapeutic value in the treatment of hydrophobia. The tree is a very interesting

¹ Vide THE LANCET, p. 724.

² Madras Quart. Med. Journ., 1862, vol. v., p. 279.