dull up to the level of the nipple in front, and to the lower angle of the scapula behind, with fine crepitation. There was lividity of the face and lips. Temperature 102.8°, pulse 132, respirations 80. In the afternoon, there was little change, and the very hurried respirations were almost entirely bronchial. Blood to the extent of eight or ten quinces was taken from the arm. This was followed by marked improvement in the pulse; the respirations fell to 52; and the patient felt much easier, and slept a little. The temperature remained at 102.8°. September 4th. The patient had rested well during the night. Temperature 98.4°, pulse 96, respirations 40. The physical signs remained the same as those of the previous day. In the evening, the pulse was 88, temperature 98.4°, respirations 32. There were dulness and bronchial breathing, with a few loud *râles* and friction-sound on the left side; small crepitation, with bronchial breathing, on the right. The sputum continued rusty and tenacious. September 6th. Morning: pulse 92, temperature 98.4°, respirations 40. Dulness was not diminished. Crepitation *redux* was heard. Evening: pulse 88, temperature 98.4°, respirations 28. September 7th. Pulse 80, respirations 32, temperature 98.4°. Evening: pulse 76, temperature 98.4°, respirations 32. September 8th. Pulse 72, respirations 28, temperature 98.4°. Evening: pulse 70, temperature 98.4°, respirations 24. September 9th. Pulse 72, temperature 98.4°, respirations 24. There was dulness to within one inch of the spine of the scapula on the left side behind, and to the nipple-line in front. Crepitation *redux* was heard. The pleuritic friction-sound was disappearing. Air was entering the lung fairly well. On the right side, dulness was more marked than on the left. Breathing was bronchial. There was increased vocal fremitus. The patient continued to do very well, and a week later was dismissed.

CASE XIX.—G. McL., on Wednesday, which was a wet, stormy day, was engaged in out-door labour. The same evening he felt unwell; the next morning he felt worse, but did not consider himself sufficiently ill to stay away from his work. Accordingly he went at the usual hour, but had to return home, feeling very cold, and complaining of cough, and pain in the side. That night he had a rigor. On the following Sunday he was seen, when he was found to have a pulse of 104, temperature 103.2°, respirations 30. There were dulness at the base of the left lung, fine crepitation, and rusty sputum. This, like the two preceding, was a typical case of pneumonia. On the ninth day, the crisis took place. The patient rapidly improved, and is now quite well.

CASE XX.—J. S. was exposed to the weather on same day as the last case. On that (Wednesday) evening, according to his own account, he became very ill, and took to his bed. On Sunday he was seen, and found to have marked symptoms of a double pneumonia; pulse 104, temperature 103.4°, respirations 56. There was rusty sputum, with fine crepitant *râles*, and dulness at both bases, and severe pain in the back. The heart-sounds were irregular, intermittent, and weak. The patient's aspect was very dejected, and, altogether, his symptoms were such as to hold out little hope of recovery. In two days he died.

All the cases of this group occurred within a radius of a quarter of a mile.

GROUP VI. CASE XXI.—McI. (child) was first visited on August 6th. There were loss of appetite, pain in the side, and flush. Pulse 150, temperature 103°, respirations 52. There was dulness at the left base, fine crepitation, and cough. August 10th. The sputum was rusty. There was fine crepitation at the spine of the scapula, flush, and dyspnoea. August 12th. There was copious perspiration, with deferrescence. The cough was slightly abated. The pain in the side continued. Rapid recovery followed.

CASE XXII.—J. McD., aged 8, was first visited August 10th. The patient had been ill for some days; pulse frequent, temperature 100°. There were signs of consolidation at the left base. August 12th. Pulse 105, temperature 100.6°, respirations 28. There were dulness over the left base, increased vocal fremitus, and resonance. August 16th. Pulse 120, temperature 102°, respirations 32. There were dulness, pain in the side, and cough with tenacious sputum. August 18th. Pulse 90, temperature 101°, respirations 28. The patient had cough, with tenacious sputum; he sweated a good deal, and was flushed. August 22nd. Pulse 100, temperature 98.4°, respirations 26; crepitation *redux* was heard. There was dulness at the right base. August 26th. Pulse 100, temperature 99°, respirations 25; cough was still present, but the patient was much improved.

CASE XXIII.—F., aged 50, was visited on August 16th. For a few days previous he had felt unwell, with an occasional shivering fit. Thinking that he was suffering from an ordinary cold, he took a dose of calomel. This did not relieve him, and, on the appearance of blood in his sputum, he sent for a medical man. At the time of visit, there

were cough with bloody expectoration, dulness, and fine crepitant *râles* at the left apex; pulse 65, intermittent. August 18th. There were dulness and fine crepitation at the apex of the left lung. The blood in the sputum was diminished; pulse 75. August 20th. Pulse 100, respiration 32; crepitation was heard at the left apex. There was a suspicion of commencing right pneumonia. Some of the sputum in this and the previous case was collected in a stoppered bottle and examined, when micro-organisms, similar to those already spoken of, were found. August 24th. The dulness and crepitation at the left apex continued. The rest of the pulmonary apparatus was clear. Blood had ceased to appear in the sputum; pulse 80, temperature 98.4°, respirations 28. The microscope was brought to the patient's house, and the sputum was examined; micro-organisms were found. A few days later the sputum was again examined (fresh supply), but no organisms could be found. This patient was weakly, and took a long time to recover.

A CASE OF PNEUMONIA, OCCURRING AT A COLD HIGH ALTITUDE.

By A. TUCKER WISE, M.D.

C. J., aged 30, an Italian, native of a malarious district in Italy, was seized with giddiness, sickness, and shiverings, on January 20th, at 8 P.M. He was in bed, complaining of pain over the left lumbar region. He looked pale and sleepy. Pulse 100, strong, large, and of moderate tension; temperature 101°, respirations 28, conjunctivæ blanchied. He vomited during the examination of his chest. There was no delirium nor rigors. The chest presented signs of harsh entry of air over both sides of his back; general impaired resonance, but no absolute dulness. With the slight cough he had, there was rusty, gluey expectoration. His urine was normal. The bowels were open; tongue moist, not coated. He was given a hypodermic injection of morphine, and ordered liquid diet.

January 21st. He complained of pain in the left side; temperature 101°, respirations 28, pulse 100. His lips were bright-red, and his face flushed a little. There was dulness over the left infrascapular region, limited to an area of four square inches; fine crepitations were heard there, with bronchophony and tubular breathing. He was ordered a mustard-leaf over this spot, and half a drachm of compound spirit of ammonia, in water, every four hours; also 5 grains pills of hydrargyri with coloc., at night.

January 22nd. The bowels were open freely; his face was flushed; spleen enlarged. On inquiry, it was found that he had suffered, a few years ago, from malarial fever; pulse 116, temperature, 104.1°; respirations 30. He had great thirst; his tongue was white and moist. He was ordered a grain of opium, and turpentine stupes.

January 23rd. Respirations 30, pulse 100, temperature 104°; dulness and tubular breathing extended to the right side, and over the whole of the left lung. He slept well during the previous night. He was ordered to have 5 grains of quinine.

January 24th. Respirations 32, temperature 101.7°, pulse 100, regular, but weak. He was ordered to have half a drachm of compound spirit of ammonia, and half a grain of powdered opium, every four hours, in water.

January 25th. Respirations 33, temperature 103.2°, pulse 106 (dicrotus). The urine was loaded with lithates. Owing to the low temperature of the room, his medicine was frozen in the bottle. He was ordered to have 5 grains of quinine.

January 26th. Temperature 100.6°, respirations 24, pulse 104. *Redux* crepitations were heard over the whole of the right back. His tongue was moist, and coated with white fur. He had slept well, and coughed less. The sputum was still rusty coloured. All liquids in the room were frozen, and the vapour of his breath was plainly perceived from the other end of the apartment. The bottle of milk, and also the medicine-bottle, he placed under his pillow, to guard against their solidification. He had not felt the cold. His aspect was improved. The temperature in the open air this day was 2° Fahr. at 9 A.M., 16° Fahr. at noon.

January 27th. Temperature 98.2°, respirations 22, pulse 80. There was amelioration of all bad symptoms. The temperature of the room stood at 25° Fahr. at the time of my visit.

January 28th. Temperature 97.8°, respirations 28, pulse 64. The temperature of the bedroom was 21° Fahr.

January 29th. He was progressing favourably. The temperature of the bedroom was 23° Fahr.

January 30th. The temperature of the bedroom was 28° Fahr. at 2 P.M.; a minimum thermometer showed 23° since the previous day.

January 31st. I found him, at the time of visit, sitting out in the sun. The next day previously to the "visit," he wilfully left Maloja for Italy, descending 3,800 feet in five hours. It was reported that he gained strength slowly, but made a good recovery.

This man, who was a plasterer, contracted his pneumonia from the effects of rapid and extreme variations of temperature, and irritant coke-fumes. Although he was a native of Italy, tainted with malaria, and not a robust subject, he made a good recovery in the dry air of the Engadine during the coldest part of winter.

Externally, in a Stevenson's screen, thermometers indicated the following temperatures, during the man's illness: mean temperature, Fahr., 18.6° (9 A.M.), 25.8° (noon), 27.7° (3 P.M.); maximum, 38° Fahr.; minimum, 4° Fahr. The "mean weight of moisture suspended in the air," calculated at noon by Apjohn's formula, was 11 grains per 10 cubic feet of atmosphere; (at Kew, the mean for the whole month of January equalled 25 grains per 10 cubic feet). The mean "drying power of the air," or weight of vapour which 10 cubic feet were still capable of absorbing, was 5.3 grains.

MASSAGE AS A THERAPEUTIC AGENT.

By WILLIAM MURRELL, M.D., F.R.C.P.,

Lecturer on Pharmacology and Therapeutics at the Westminster Hospital;
Examiner in Materia Medica to the Royal College of Physicians of
London and the University of Edinburgh.

MASSAGE is of such inestimable value in the treatment of many intractable diseases, that it is to be regretted that so little is known about it in this country, and that it is so rarely employed as a therapeutic agent. It is often spoken of as a new method of treatment, but it has been in general use on the continent for a long time, and, more than ten years ago, received the adhesion of Billroth, Langenbeck, Esmarch, and other authorities. In a crude and primitive form, it is very ancient indeed, and is probably as old as surgery itself. Amongst the Greeks and the Romans it was extensively employed, both as a means of hastening convalescence from long tedious illnesses, and to relieve pain, and render supple bruised or injured joints. The writings of Plato abound in references to this mode of treatment, and its virtues seem to have been very generally recognised.

It is to be feared that there is a certain amount of prejudice against the employment of massage, arising, probably, from the fact that it is frequently confounded with "shampooing" and "medical rubbing;" but it is, in reality, a scientific mode of treatment well worthy of attentive study at the hands of skilled physicians and surgeons. The literature of the subject is extensive, and it would be impossible to give, within the limits of a short article, even an abstract of it. There are several kinds of massage, but the system almost universally adopted in Germany is that associated with the names of Mezger and von Mosengeil. Mezger may be regarded as the father of the modern phase of massage, while Professor von Mosengeil, by his accurate and painstaking experiments, has done much to establish it on a sound scientific basis. Those who have studied under the last named distinguished surgeon, and have had an opportunity of seeing him practise his method, will appreciate the fact that there is much more in it than at first sight appears. It is essential for success that the various processes should be carried out systematically, and in a definite order; although, of course, the same method of treatment is not applicable to every case. Every "movement" begins and ends with *effleurage*, the palm of the hand, and sometimes the knuckles, being employed for the purpose. It is always centripetal, and is performed with considerable rapidity and force. *Pétrissage* is a more complex process, and is by no means easy to acquire, although it looks simple enough. *Friction* is performed with the tips of the fingers, and is used in conjunction with *effleurage*, chiefly in the treatment of various affections of the joints. This term, which was originally introduced by von Mosengeil, is an unfortunate one, for it has nothing in common with what we ordinarily understand by friction. *Tapotement* is a kind of percussion, and may be performed either with the tips of the fingers, the partially closed hand, or its ulnar or radial border. Mezger rarely employs electrical treatment in conjunction with the manipulative processes, but von Mosengeil attaches much importance to it, and, in suitable cases, uses both the interrupted and constant

currents to stimulate the motor points. He dispenses with complex apparatus, and his sessions are of short duration, rarely exceeding five minutes. On the continent, the physician or surgeon is usually his own operator, it being considered inexpedient to employ, even as an assistant, anyone who has not been thoroughly and systematically trained, a process which requires, at least, two years of unremitting attention. It is known that, in many instances, incalculable harm has resulted to patients from ill directed efforts, or the selection of unsuitable cases. For the treatment of women and children, an accomplished *masseuse* is essential; but she must be well educated, and should have such a knowledge of anatomy and physiology as will enable her to carry out the instructions of the physician intelligently. It is not at all necessary that she should be physically strong, aptitude being of more importance than mere muscular strength. The hands must be soft; and, if proper precautions be taken, there is never any risk of abrading the skin.

It is no easy matter to say in what class of diseases massage proves most useful. Unfortunately, its employment has been advocated in many cases, for which it is essentially unsuited. Accurate diagnosis is of the utmost importance, and the sphere of usefulness of this remedy will, with increased experience, become more accurately defined. My best results have been in infantile paralysis; and it was in consequence of the success achieved in certain obstinate cases of this disease, that my attention, as has been elsewhere stated, was directed to the subject. Progress is often slow, but the ultimate results are most satisfactory. The nutrition of the parts is maintained until new cells in the spinal cord take on the functions of those which have undergone degeneration, or have been destroyed. Massage is, undoubtedly, of much value in many cases of obstinate neuralgia, and succeeds admirably in some forms of muscular pain, such, for example, as those described by the late Dr. Inman under the term "myalgia." There is a general consensus of opinion that it is well adapted for the treatment of chronic joint-affections; and most of those I saw treated by von Mosengeil were such as would, in this country, be considered incurable, or would drift into the hands of "bone-setters." There are some diseases of internal organs in which it is, undoubtedly, useful. Not long ago, a gentleman, aged 68, came to me complaining of shortness of breath, and increasing disinclination to take exercise. He had been in business, and had led a most active and energetic life. Three or four years ago he retired, and, from that time, experienced a gradual falling off in health. His appetite was poor, his bowels were obstinately confined, and he was nervous and anxious about himself. He was found to have a loud apex systolic murmur, and the heart's action was weak and irregular. I suggested massage, which was carried out systematically four days a week, for a period of six weeks. He improved from the very first, and, before the conclusion of the course, was better than he had been for many months. His appetite returned; his hands and feet were warmer; the bowels became regular; he slept well at night; and his spirits improved in a most satisfactory manner. In other cases of obstinate constipation, especially in women, I have known massage of the abdomen do a great deal of good.

In a well-known group of symptoms from which women frequently suffer, massage is essentially useful. I recently saw a lady, aged 45, or thereabouts, a professional singer, who was labouring under the impression that she was going mad. She was so nervous that she was quite unable to accept an engagement, although she had been constantly before the public, and had hardly missed a night for twenty years. She told me that she felt she was not to be trusted, and that, if left alone, she would do herself or her children an injury. She was afraid to go near an open window, so great was the temptation to throw herself out; and she even begged that the knives might be removed from the table at dinner. These symptoms were greatly intensified after each monthly period, and she insisted that she was suffering from cancer, or some organic disease of the stomach or womb. She was restless at night, and would often get up in the early morning, and walk for hours, until thoroughly exhausted. She was given full doses of the bromides—a drachm, or more, four times a day—but with only temporary benefit. Massage was then tried; and it seemed, to use her own expression, to soothe her, and calm her, and make her forget her troubles. The case was a prolonged one, but now, at the expiration of three months, she is much better, and will soon be able to resume her professional duties. In several other cases of restlessness and inability to sleep, the same method of treatment has proved efficacious.

Dr. Graham, of New York, speaks highly of massage in the treatment of neurasthenia. He uses it for those "who, in spite of rest, change and medication, have become chronic neurasthenics, the result of business reverses, overwork, worry, loss of relatives, disap-