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FIG. 1. Massage of the Arm. 110-13.



FIG. 2. Effleurage of the Arm. 41.

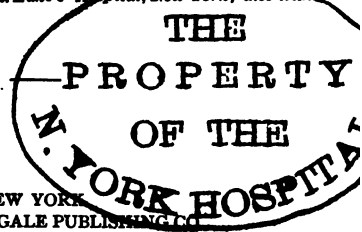
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MASSAGE, A Primer for Nurses.

BY

SARAH E. POST, M.D.

Lectures before the Training Schools for Nurses, connected with Bellevue Hospital, Mt. Sinai Hospital and St. Luke's Hospital, New York; also with the Memorial Hospital, Orange, N. J.



NEW YORK
THE NIGHTINGALE PUBLISHING CO.
13 WEST 42D STREET.

1890.

12

Entered according to Act of Congress, in the year 1880, by
THE NIGHTINGALE PUBLISHING COMPANY,
In the office of the Librarian of Congress.

Y&A S&E L I N&A I

P85
1890

MASSAGE.*

INTRODUCTION.

THE way to learn massage is to do it. This apparently paradoxical statement is as true of the practice of massage as it is of the reading of foreign languages, the practice of cookery or other arts which might be named. One may study the grammar of a foreign language for a long time without thereby becoming competent either to read or to speak it. One may pore over a cookery book without becoming able to produce a palatable dish. Similarly the rules of massage, the science of massage, are small matters by the side of the art which can be acquired in perfection only by practice extending over months or years. In spite of this fact however there are preliminary exercises which prepare the hands and make its acquisition more easy. Among these, piano practice will perhaps rank, with other exercises which give breadth of grasp to the fingers and suppleness to the joints of the hands. Housework, such as washing, ironing,

*Lectures before the Training School for Nurses, Orange, N. J.

sweeping and the like, should upon first thought give strong capable hands; but as a result of experience this inference has not been proved true. Hands much occupied in domestic duties are apt to be, on the contrary, stiff-jointed and to have little spread of the fingers and but little strength of grip. Household duties do not develop the smaller muscles and the finer movements of the fingers and hand. The use of the pen and the needle also produces a hand which is inclined to be stiff. Almost any hand may however be trained and developed by perseverance and care. A large hand is an advantage if it is also pliable, but a small hand may often be made to do more work by means of greater reaching power.

An opinion is often requested in regard to the physique for the operator in massage. The main source of fatigue in giving massage is very probably unaccustomed positions and unaccustomed muscular strain. Here again any physique can be trained to endurance, provided first that the vital capacity be good and by this is meant the working capacity of the heart and lungs. To ensure a good operator the difference of chest circumference during inspiration and expiration should be at least 2 inches. 2, 1-2 or 3 inches would suggest still greater working power. To test this point take the bust measurement at the end of a full inspiration and again at the end of a forced expiration and note the difference. This is one of the best tests of capacity for physical work. It is also a good test for probable endurance under other strains such as those of privation or disease.

The massage operator must not easily get out of breath. A Superintendent of a school has said to me, "Can you not elaborate some system by which the operator may spare her strength." I know of no such system which can be relied upon. I know that there

are instruments—rollers and the like—which are supposed to take the place of the hand and by means of leverage to economise strength. As a tonic in nervous conditions these do nicely, but when you come to the true surgical massage or anatomical massage for surgical conditions they are at fault. Not one of these instruments accommodates itself to the surface as does the hand. Not one of them even imitates the essential motions of massage. Not one of them can take the place of massage, although any one of them may have a very well earned place of its own. I know of no way of giving massage without the expenditure of the operator's own muscular force. An hour's massage is for the operator as much exertion as an hour's hard work in the gymnasium and the general weariness which is produced is very much the same.

We come to the question of dress. The massage operator should not be restricted at the waist, if she would be placed at the best advantage for her work. The corset and skirt bands which bind at the waist, should be avoided.

It may be superfluous to add that the utmost personal cleanliness is required of the operator in massage. The daily bath and frequent changes of linen are imperative.

Having prepared ourselves for the practice of massage, we shall in our next lesson proceed directly to the motions of which it consists.

THE MOTIONS OF MASSAGE. § 1.

1. In the literature of massage we find the required manipulations referred to under the terms, Massage, superficial and deep ; Effleurage ; and Tapotement.

2. Superficial massage is a term applied to the kneading of the subcutaneous tissues and skin.

3. Superficial massage may be performed in two ways. The first is by rolling the skin and subcutaneous tissues between the thumb and index finger.

4. The first motion of superficial massage is particularly useful in work upon the abdominal walls. In subjects where this part is very lax, the motion may be modified by taking the opposing surfaces between the palms of the hands and gently kneading the one against the other. The manoeuvre should be repeated only two or three times in one place, Then the hands or fingers should be slightly moved so as to take in new territory ; subsequently, perhaps, returning once, twice or many times to the original part.

5. The second motion of superficial massage is a circular motion with the thumb or fingers by which the skin and subcutaneous tissues are compressed upon the underlying part.

6. The second motion of superficial massage is applied to the smaller subcutaneous muscles, to the fibrous tissues, which closely surround the bones, and to the nerves at their foramina of exit. It is particularly useful in work about joints, in work about the eye-balls, and in work upon the muscles and other tissues of the scalp.

The educated finger will in this motion carefully follow the topography of the part. In no motion of massage is a knowledge of bone anatomy of greater use. The trained operator disregards the external contour and sees the unclothed skeleton before her. She penetrates the depressions of the fossae and seeks

out the foramina as she follows the surfaces of the bones.

7. A rule to be observed in superficial massage is not to move the finger upon the skin. In neither of these motions is the thumb or finger moved upon the skin, but the skin and underlying tissues are moved with the finger upon the opposing part.

8. Deep massage comprises work upon the larger skeletal muscles; also upon the abdominal and pelvic organs and other deep-lying parts. It also is performed in two ways according to the organ which is to be reached.

9. The first motion of deep massage is that used in work upon the larger skeletal muscles. Massage of the skeletal muscles has been the crucial test of ability in the operator. According as he or she could or could not accomplish this motion satisfactorily, they were or were not good manipulators. For no motion is the ordinary woman less well prepared, none does she find more difficult of acquisition and in none are bad habits more common. Let us then first impress upon our minds exactly the object, which should be kept in view.

10. In massage of the larger skeletal muscles, the object to be accomplished, is first, to grasp a muscle or group of muscles; and second, to empty this muscle or group of muscles, so far as we can, of blood and to encourage a fresh supply. This is obtained by squeezing the muscle and then letting it go, exactly as the bulb of the atomizer or of the Davidson's syringe is alternately compressed and relaxed. Bear in mind then the attitude of your hand in the use of a bulb-syringe. Do you not use the palmar eminence of the thumb in opposition to the three last fingers? I think that you do if you have learned to use this instrument with a broad comprehensive grasp.

11. In massage of the larger skeletal muscles, grasp the muscle or group of muscles between the three last fingers and the palmar eminence of the thumb, carrying the hand at a right angle to the ulnar border of the forearm and the thumb at a right angle to the hand. To grasp a muscle or group of muscles you must be able to surround it, the grasp being at a right angle to the muscle's length.

12. In applying the hand thus outstretched to the limb, the ulnar border of the operator's forearm should be parallel with the limb and the ulnar border of the hand at a right angle to it. The extremities of the thumb and index finger should be kept out of the way, they have no part in this motion.

13. Having adjusted the hand to the part this first motion of deep massage consists in alternately intensifying and relaxing the grasp upon the muscles, repeating the manoeuvre two or three times, and then slightly shifting the position so as to take in a different part.

14. An essential rule to be observed in deep massage, also, is not to move the hand upon the skin. Neither pinching nor friction are required. The first motion of deep massage is simply a squeezing or grasping manoeuvre, the hand embracing, so far as possible all of the tissues outside of the bone.

15. The second motion of deep massage is used particularly in work upon the abdominal organs. It consists in compression of the parts against the underlying surfaces by means of a downward pressure not unlike that used in the kneading of bread.

16. In massage of the abdominal organs it will be found most convenient to use the outspread fingers of the nearer hand and the palm of the further hand alternately.

17. In massage of the abdominal organs the motions should be slow and care should be taken to

avoid abruptness in the alternations. The pressure should gradually increase and then gradually diminish in intensity before the hand is moved to another part. In this motion the operator may stand with the knees braced against the side of the bed so as to balance the weight of the body upon the outstretched hands. Gravity thus assists in the performance of the work and an equable pressure is obtained.

18. The object of this motion is to accelerate the circulation of the blood in the abdominal organs and to excite peristalsis in the intestinal muscular layer. These muscles belong to the group of the involuntary muscles. They appreciate stimulation and respond to it very slowly. Hence, to give the best results the impression must be prolonged, the hands must not be rapidly moved from one part to another.

19. Effleurage is a stroking motion which consists in passes of the hands from the extremities towards the heart.

20. This motion is applied particularly to work upon the limbs and the neck, the regions over the great vessels receiving special care.

21. In effleurage upon the thighs and upon the neck both hands may be applied simultaneously or alternately; but upon other parts only one hand can be used, the other being required to steady the part.

22. Effleurage should be applied with a firm, deep pressure, the hand being well oiled. Where oil or vaseline is objected to by the patient, talcum powder will be found to answer the purpose. Unless some lubricant is used, sufficient force cannot be applied without giving pain.

23. The object of effleurage is to empty the vessels which return the circulatory fluids to the heart. By its means we may reduce engorgement and hasten the absorption of matters effused from the blood. The heart, as a force pump, sends blood into the arteries.

These terminate in a network of capillaries which tunnel every part of the body. The capillaries finally coalesce, forming other large vessels—the veins which receive the capillary blood. The force of the heart has been largely spent by the time that the blood arrives in these veins and, consequently, the current in them is slow.

The slowness of the venous current is a misfortune where a pathological congestion has occurred. In congestion the smaller arteries of the part are dilated and the capillaries receive more than their usual supply of blood. The venous flow continues its sluggish course and, as a result, engorgement of the capillaries with, finally, choking of the capillaries and stagnation of the current occurs.

Each throb of the heart brings more blood to this already over-supplied part and, from the pressure or other unnatural conditions present, the capillaries permit the escape of their contents through the walls. Inflammation and abscess may be the result.

The stroking movement of massage is capable of averting this history. Applied during the period of congestion, not on the congested part, but above the congested part, it mechanically empties the veins toward the heart. On account of the valves in the veins, no backward flow can take place and the empty lumen draws upon the contents behind it. If it be again and again emptied the capillary current will be re-established, and, when relieved from tension, the arteries may recover their usual calibre, or, in other words, recover their tone.

It might here be repeated that where we use massage for congestion, we do not work upon the congested part, but upon the part, internal to it or toward the heart.

Where effusion has already occurred, the stroking motion is further capable of hastening the absorption

of the effused matters. It does this by accelerating the current in the lymphatic system or the drainage system of the body. Surrounding the elements of the tissues are spaces which contain the so-called juices of the tissues. It is into these spaces that the nutritive portions of the blood pass and it is from these spaces or eating troughs that each little element takes up its portion of food. It is in these spaces too that the water of oedema and other pathological products are found. Lymphatic capillaries proceed from these spaces; which lymphatic capillaries coalesce and form larger lymphatic vessels, terminating in the great veins.

The flow in the lymphatics is still slower than that in the veins, because it is not in any direct way aided by the heart. The lymphatics also have valves and as in the case of the veins, we can, by the stroking movement of massage, mechanically displace their contents toward the heart and thus hasten the process by which effused matters are absorbed.

The tissues may be clogged with excrementitious material, not only in local inflammatory processes, but also in conditions of malaise, where, with a sluggish circulation, the general health is impaired; and in obstructive diseases of the liver, kidneys and other organs. In these cases also effleurage will be of service.

The irritation of muscle nerves causes dilatation of the smaller arteries and an increased supply of blood. Within physiological limits an increased blood supply improves nutrition and, if we add to deep kneading an occasional stroking motion for the better emptying of the lymphatics and veins, we have in massage an ideal substitute for muscular exercise without the expenditure of nervous force.

By tapottement is meant the clapping, pounding and vibratory motions, whether applied by in-

struments or the hand.

24. Manual percussion may be done with the finger-tips, with the hollowed palmar surface or with the ulnar border of the hand.

25. Tapottement with the hollowed hand is particularly useful where a large surface is to be rapidly covered.

26. An advantage of tapottement with the hollowed hand is the cushion of air retained between the palmar surface of the hand and the part to be percussed. This cushion of air makes contact but momentary, as its expansion gives an impulse to the hand away from the part. Tapottement with the hollowed hand is not only remarkably effective, but it is also a rule very agreeable to the patient.

27. Percussion with the finger tips or the ulnar edge of the extended hand is used where the work is upon a narrowly restricted part.

28. In percussion from the finger tips, the fingers should be semi-flexed and the movement should be made from the wrist, or the fingers may be extended, the wrist-joint stiffened and the motion be made with the vertical hand from the shoulder or elbow.

GENERAL MASSAGE. § II.

29. By general massage is meant a systematic application of massage to the general body surface, excepting usually the head, neck and breasts.

30. In applying general massage the patient should be disrobed, excepting perhaps the undervest, wrapped in a blanket, and lying upon a measurably firm surface. A lounge is seldom resistant enough; a well-mattressed bed is to be preferred. A double blanket will be found more manageable than a single blanket also for enveloping the patient. The operator should stand with this blanket extended before

her ready to enwrap the patient immediately upon emergence from her clothing. A second single blanket or soft shawl will be needed in the course of the application and should be at hand.

31. The operator prepares herself by the precautions mentioned in the introduction to these lectures. She is clothed so as not to restrict motion, she has had her daily bath and is freshly apparelled, so that no hint of decomposing perspiration lingers about her. It should be borne in mind that the muscular exercise of the operator in massage resembles that of the laboring man and that without special attention to the minutiae of cleanliness she will be apt to carry about with her the same odors.

32. In addition to these preparations and before touching the patient, the operator should wash her hands. Why must she do this when she has left her home with her hands perfectly clean? In the first place, because we can scarcely exist for half an hour without gathering dust upon the exposed parts of our bodies. In the second place, because the moral effect upon the patient is good. There is considerable repugnance on the part of many women to being touched by strange hands. One reason of this repugnance is that they cannot be sure that these hands are perfectly clean. Do not let this doubt haunt the mind of your patient. The comfort of assured cleanliness is, to the sick, greater than, perhaps, the well know.

33. The order of procedure in general massage varies with different operators. After you have worked for a time at the business you may find it desirable to adopt some plan of your own. To start you, however, I will give you a programme which has stood the test of some practice and has been fairly satisfactory. In this programme your patient first lies upon the side, facing you and you commence with the finger tips of the outside arm. Passing th

arm and shoulder you next work upon the back and then the outside leg. During this time the patient has not changed her position. You now place her upon her back and work upon the other leg or the one nearest you; then turn her slightly towards the other side and massage the side of the trunk and the shoulder thus exposed; then return her to the position upon her back and work upon the remaining arm, proceeding from the shoulder downwards. Last you subject the abdominal wall and the abdominal contents to superficial and deep massage. It will be seen that you need scarcely lift your hand from the surface in the course of the application, each part being continuous with the one next in hand.

34. The amount of time to be consumed in general massage must be correctly apportioned to the various parts or the treatment will either be prolonged so as to fatigue the patient or will be unduly short. As a rule, one hour is given to the whole application. Of this hour twenty minutes may be apportioned to the work upon the back, twenty minutes to that upon the lower extremities and twenty minutes to that upon the abdomen and arms. The first arm will thus receive but about five minutes of the entire time.

35. In massage of the arm proceed gently but quickly over its surface. Taking up the little finger subject it to superficial massage performed according to 5 and having completed this motion, hold its extremity firmly between the left thumb and fore finger, passing the right thumb and fore finger by one or two quick motions down its inner and outer surfaces, the motion being from the extremity to the hand. This motion is intended to empty the veins and lymphatics which accompany the arteries, whose pulse may often be obtained in this location. Having finished these two motions in the case of one

finger, you quickly take up another and another and having finished the fingers you pass to the hand.

36. In work upon the hand the first motion is a superficial massage of the dorsum according to 5, then a deep massage of the thenar and hypothenar eminences according to 10 followed by effleurage performed with the side of the thumb upon the dorsum in the interosseus spaces, the motion being towards the wrist.

37. The forearm now claims your attention. Here and in the succeeding part it will be of assistance to bear in mind the location of the great muscle groups and the distribution of the main vascular trunks. In the forearm we have the flexors of the hand upon the anterior surface and the extensors of the hand upon the posterior surface separated posteriorly by the ulna. In taking hold of the forearm exclude the ulna so far as you can from your grasp.

38. In massage of the forearm employ the motion described in 10, alternating with the motion of effleurage. This is obtained by steadying the part with one hand and passing the other from the wrist to the elbow, putting the most pressure over the radial pulse, two or three motions of deep massage being quickly followed by the motions of effleurage, the order being massage, effleurage, massage, effleurage, and so on.

39. In the arm we find two great muscles the biceps and the triceps forming respectively its inner and outer surfaces.

40. In massage of the arm grasp the biceps with one hand and the triceps with the other, using the first motion of deep massage, 10, varying it with effleurage as before.

41. In effleurage of the arm, pressure is especially made along the inner border of the biceps where the

veins accompanying the brachial artery are found.

42. Massage of the shoulder in general or medical massage resolves itself into massage of the deltoid, a large triangular muscle having its origin along the outer third of the clavicle and the spine of the scapula and its insertion upon the outer surface of the arm one-third of the distance from the shoulder joint.

43. In work upon the deltoid muscle we may vary the first motion, 10, with the second motion of deep massage, 15. Effleurage should here also be used at frequent intervals.

44. In effleurage of the deltoid, both hands are to be employed the motion being toward the neck.

45. Having finished this part, shoulder and arm should be covered with the extra blanket with which you have been previously provided, then the enveloping blanket should be slipped down from the back. Massage of the back practically embraces that of the muscles over the scapula, properly belonging to the shoulder but, by their position reached in connection with underlying and adjacent parts of the back.

46. Work upon the scapular region is performed by means of the second motion of deep massage, 15. This motion is continued to the adjacent muscles over the ribs and along the spinal column. The neck muscles are grasped from the back by the first motion of deep massage, 10. Effleurage is upon the back replaced by friction.

47. Friction of the back may be conveniently applied in either a transverse or a longitudinal direction. Transverse friction of the back is obtained as follows: Having the patient in the position already described, upon the side and facing the operator, the left hand of the operator is extended and drawn transversely across the back, from the further to the nearer side, the palm being applied to the part. Beginning a

second later the right hand is projected or pushed over the same territory but in an opposite direction from the nearer to the further side, crossing the track of the left hand in the median line or over the spine. Having thoroughly reddened the skin by this motion it may be varied by friction in the longitudinal direction.

48. Friction in the longitudinal direction is obtained by using the two hands alternately. With the patient still upon her side and facing you, extend the fingers and pass the tips from the coccyx to the neck along the hollow of the spine. Without lifting this hand or losing your hold upon the skin, keep the position obtained at the base of the skull and with the fingers of the other hand similarly extended and stiffened pass from the neck downwards. If it be kept in mind that the object of the motion with the left hand is to prevent too great displacement of the skin by the right hand during its part of the manoeuvre, these directions will perhaps receive better appreciation and closer compliance. Quickly follow the right hand with the left, the left with the right, and so on. While the motions themselves should not be hurried, the intervals between them should be short. In the art of passing quickly from one motion to another the massage operator might profitably take a lesson from the conjuror in legerdemain. Observe how slowly, how deliberately he is proceeding when, presto, he is doing something else in the same deliberate way. Massage is not a rapid motion, effleurage is not a rapid motion or should not be, but the transition time between the two should be well-nigh infinitesimal.

49. Both transverse and longitudinal friction of the back are at first difficult because they require simultaneous contrasted motions. Upon ordinary occasions we perform only similar motions simultaneously.

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It takes some mental grasp as well as some practice to give to each hand a separate control. The motions can however be learned by anyone. To the patient they are perhaps the most enjoyable of all the motions of general massage.

50. Friction of the back should not be attempted with a moist skin. Where the patient is perspiring the surface should be first thoroughly dried with a towel or the talcum powder may be sprinkled upon it. Where the operator's hands are moist the powder should be used also.

51. We now pass to the gluteal muscles. These should not be neglected as they are of great importance in assisting man to the upright position. They are especially used in rising from the sitting position, mounting stairs, climbing and analogous exercises.

52. In work upon the gluteal muscles, we use the second motion of deep massage, 15. Here the operator should make herself particularly familiar with the bone Anatomy of the part and should be able to recognize the head of the femur, the tuberosity of the ischium and the great sacrosciatic notch. Deep massage will here reach the sciatic nerve as it emerges from the pelvis and some patients will benefit by attention to this region. The force used should be however but gradually and cautiously increased. Gentle but persistent work is as a rule more effective than violent efforts in all inflammatory conditions.

53. In massage of the thigh but little attention need be paid to the muscle groups as these overlie each other to form a more or less compact mass. As a rule it is most convenient to grasp the front of the thigh with the one hand and the back with the other.

54. In work upon the thigh, use the first motion of deep massage, 10, varied by effleurage, here to be performed with both hands.

55. In effleurage of the thigh, special pressure

should be made in the popliteal space under the knee and along the inner half of the front of the thigh.

56. The muscles of the leg are chiefly massed upon its posterior surface. Excluding the tibia so far as possible, the limb is grasped with the two hands either from the front or the back. The motions are as on the preceding part.

57. Effleurage of the leg can be performed with one hand only, the other hand being required to steady the foot and the limb. In effleurage of the leg the hand passes first over the ankle, special pressure being made with the fingers behind the inner malleolus and upon the dorsum of the foot. If in doubt about these locations, feel for the pulse which is to be found in the parts. Bear in mind that the pulse is valuable, not as locating the vessel you desire to influence but only as locating one contiguous to it. The larger arteries are always accompanied by veins and a complicated mass of lymph channels. Effleurage is intended to hasten the flow in these vessels which return fluids to the heart.

58. Another caution to be observed in effleurage is not to neglect the general surface of the part because of special attention to the regions over the great vessels. The whole body is in one aspect but a mass of lymph spaces or avenues along which the elements of the tissues are born, live and die. Subcutaneous emphysema or œdema by inflating these spaces demonstrate very graphically their existence and their wide range of extension over the body. Pressure will, properly applied any where, empty lymph channels. In effleurage therefore it is desirable that the part should be surrounded by a firm even pressure in addition to the special indications described.

59. In massage of the foot, use for the dorsum the

second motion of superficial massage, 5, and for the plantar surface, the first motion of deep massage, 10, as in work upon the hand.

60. In effleurage of the foot we may follow the interosseous spaces where these can be easily reached. In many cases however better results will be obtained with the two palms, one being upon the sole of the foot under the instep and the other upon the dorsum. Alternate motions are here made with the two hands, the direction being upwards or towards the trunk. These motions are very short and considerable force may be used, They can be continued by effleurage of the ankle, the leg and the thigh as already described.

61. The order of procedure in work upon the second half of the body is foot, leg, thigh, gluteal region, side of trunk, shoulder, arm, forearm and hand. It will be observed that we do not in this order strictly follow the rule that work should begin upon the distal extremity of the limb. In work upon the first upper extremity and in that upon the second lower extremity it is maintained; in work upon the other two, it is not. We do however always proceed from the distal extremity of the segment under consideration, whether it be arm, forearm or some other part. The essential element of the rule is thus preserved, all displacement of fluids being towards the heart.

62. In massage of the abdomen we work first upon the skin, using the first motion of superficial massage, 4; then upon the subcutaneous tissues and muscles, taking these up between the palms of the two hands where there is a great deposit of fat. Last the contents of the abdomen are to be kneaded by the second motion of deep massage, 15.

63. Ten minutes are usually employed upon the abdomen in the course of general massage. Where

work upon the skin and muscles is disagreeable to the patient this must be omitted and the operator pass directly to the motion of deep massage.

64. To reach the colon with massage, place the fingers under the small of the back and with the thumbs extended upon the anterior abdominal wall include the trunk so far as possible in your grasp and apply to it the first motion of deep massage, kneading it as though it were a great thigh or arm. In no other way can we include the colon and thoroughly subject it to pressure. The second motion of deep massage applied to the abdomen, affects chiefly the small intestine and stomach, Much tact is required in work upon this part as it is apt to be at least at first, very disagreeable to the patient. Delicacy in the performance of its manoeuvres will however overcome the patient's objections so that she may even learn to like the motions. I have known one patient who would sleep during their performance

65. An exception to the rule for centripetal massage is found in practice upon pugilists after exercise. We are told that rubbing is in these cases centrifugal or toward the extremities. The reason is not difficult to find. The object of the treatment is here not acceleration of the circulation which is already in an excited state of activity. It is rather intended to quiet the action of the circulatory forces and relieve the vascular tension, particularly in the brain. Centrifugal effleurage accomplishes this by detaining fluids from the heart. It is idle to fight with facts and when a man like the great Sullivan insists upon being rubbed down and not up it is safe to say that a good reason underlies the practice. It is wiser to hunt for the reason than to insist that the treatment has been inefficiently applied. Horses too are "rubbed down" not up after exercise. Rules for this practice may be formulated as follows.

66. In conditions of excited heart's action effleurage may be beneficially applied centrifugally or away from the heart.

67. The object of centrifugal effleurage is the tranquilizing of the circulation by slowing the venous current and detaining fluids from the heart.

68. Centrifugal effleurage may be therapeutically useful in conditions of sleeplessness with flushed face and overexcited brain.

69. Cold feet and general discomfort sometimes follow massage. Dr. Weir Mitchell has remarked that all patients do not bear general massage well. This result is often due to awkwardness in the manner of its application. The smaller arteries are surrounded by circular muscle fibres which control their lumen or calibre. These muscles are under the control of nerve ganglia or cells which communicate on the one hand with the muscle and on the other hand with the skin. These nerve cells stand all like little sentries, ready to take alarm and give warning. It is not enough that our patient should be morally willing to undergo the treatment. These involuntary muscles and independent sentries must also be taken into consideration. Our work must be approved not only by the higher intelligence of the brain but also by these thoroughly stupid little atoms of sensibility. We must please them if our patient is to be benefitted. If disagreeable to them, they are capable of defeating us by shutting up the arteries to their smallest possible calibre. The longer we work upon the limb, the colder it becomes because by the emptying of the veins we are reducing it to a well-nigh bloodless condition.

70. Where general massage leaves the hands and feet cold it has often been carelessly or injudiciously applied. If after having reduced the violence of contact by the use of powder or oil, the difficulty is not

overcome, the operator should be changed or the manipulation discontinued.

71. General massage, properly applied, lowers the pulse, warms the extremities and leaves the face pale, In cases where massage produces coldness of the feet the face will be found flushed and the pulse, accelerated.

72. Very fat people often fail to bear massage well, several days lassitude not infrequently following its use.

73. In the case of a fat person both massage and effleurage should be gentle and neither should be continued for more than a half hour until tolerance has been assured.

74. In the Weir Mitchell* or Playfair† treatment, general massage is given daily one hour at a time or twice daily, one-half hour at a time. Dowse‡ recommends the latter method, the morning application to cover the lower extremities and abdomen and the evening application, the upper extremities, head and back. As the invalid gains strength massage is replaced by passive, active and resistive movements. ||

LOCAL MASSAGE § III.

75. MASSAGE OF THE HEAD is employed in cases of sleeplessness, in cases of neuralgia of the cranial nerves and in rheumatism and gout of the scalp.

76. In work upon the scalp we use chiefly the second motion of superficial massage, ¶10. Steadying the head with the thumbs and last fingers the manip-

* S. Weir Mitchell:—Fat and Blood, J. B. Lippincott & Co., Philadelphia, 1884.

† Playfair:—London Lancet, May 28, 1881.

‡ T. S. Dowse:—The International Medical Annual, 1889, p. 72.

|| Schreiber:—A Manual of Treatment by Massage and Methodical Muscle Exercise, Lea Bros. & Co., 1887. (This book gives very full directions and diagrams illustrating the performance of these motions.)

ulation may be performed with the tips of the forefingers ; or the thumbs may be employed in the manipulation, the fingers steadying the head.

77. In massage of the scalp great care should be taken to move the skin with the fingers, the motions being very short and pressure toward the bone.

78. Massage of the scalp may be performed with the patient in the recumbent, the semi-recumbent or the upright position. If recumbent the patient should lie with the face turned away from the operator. If upright the patient may sit upon a chair, the operator standing or sitting upon a somewhat higher chair or stool behind her. A third and more comfortable position is obtained with the operator sitting on the bed with one knee supporting the pillows and the patient in a semi-reclining position. Gravity here assists the manipulation and yet the patient is not wearied as when upright.

79. Tenderness with cedema or puffiness of the scalp will be found in some cases. With the reduction of these local swellings relief from discomfort and sleeplessness will often follow.

80. From twenty minutes to a half hour may be advantageously occupied with massage of the scalp. The manipulation should be repeated daily.

81. Massage of the scalp should be combined with effleurage of the frontal and temporal regions and with massage and effleurage of the neck.

82. Effleurage of the forehead and face is determined by the course of the veins being outward and downward, the fingers following the temporal veins directly in front of the ear and continuing the pressure over the neck and the external jugular vein.

83. **MASSAGE OF THE NECK** may be performed either with the operator in front of the patient or in the rear.

When combined with massage of the scalp the latter is the more advantageous position.

84. In massaging the neck from behind, the operator may stand, the patient occupying the sitting



Fig. 9.

MASSAGE OF THE NECK—HOEFFINGER.

position ; or the operator may sit, the patient occupying the semi-reclining position already described. The operator supports the patient's head upon her chest and uses both hands in the manipulation.

85. The muscles of the neck may be grasped from

the back with the second motion of deep massage. The parts about the base of the skull should be manipulated with the finger tips, using the second motion of superficial massage, firm and deep pressure being made. Lastly these motions should be intermittently combined with effleurage of the whole neck.

86. In effleurage of the neck the operator's hands should encircle the neck excluding the trachea and larynx. In this manner the operator's thumbs meet at the spine while the finger tips approximate closely to the trachea upon each side. The pressure should be firm, the motion being downwards from the maxilla to the chest.

87. The object of effleurage of the neck is to hasten the current, particularly in the external and internal jugular veins. The external jugular extends from the angle of the jaw to the line of junction of the inner with the external two-thirds of the clavicle. It crosses the sterno-mastoid muscle and can often be distinctly seen.

88. Effleurage upon the antero-lateral aspects of the neck with the palmar surface of the hand will empty the external jugular vein. The internal jugular lies internal and more deeply, being located near the trachea upon each side.

89. To empty the internal jugulars the finger tips must press deeply and firmly into the space between the sterno-mastoid muscle and the trachea.

90. The external jugular vein conveys blood especially from the scalp, consequently effleurage applied to this vessel assists circulation in the temporal regions and scalp.

91. The internal jugular vein receives blood from the face, the mucous membranes of the mouth, throat, nose and ear, also a large part of the return blood from the brain. Effleurage of the internal jug-

ular assists circulation particularly in the mucous membranes of the head and in the brain. It is indeed, as suggested by Jacoby,* the only form of massage



Fig. 4.
MASSAGE OF THE NECK.—GERST.—First Position.

*Massage in Nervous Diseases, by GEORGE W. JACOBY, M. D.

by which we have any direct cerebral influence. It follows that the most important element of neck massage is the stroking motion over the internal jugular veins.

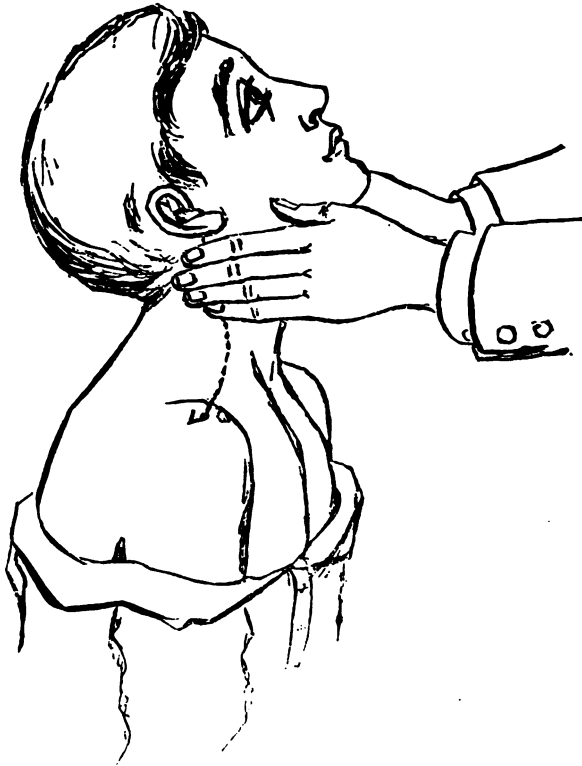


Fig. 5.

MASSAGE OF THE NECK.—GERST.—Second Position.

92. A second method of applying effleurage to the neck is that recommended by Gerst, who first extended the field of massage to the neck and demon-



Fig 6.
MASSAGE OF THE NECK.—GERST.
Third Position,

strated its value as a method of treatment. The operator here stands in front of the patient, who extends the head, making the trachea prominent. The operator then places the two hands palms upward so that the ulnar borders are just beneath the rami of the lower jaw, the little fingers being closely applied to the mastoid processes or prominences behind the ears. The ulnar borders are then carried directly downward and outward, the palms of the hands being brought into contact with the lateral aspects of the neck. The radial surfaces are next brought downward, the tips of the thumbs passing between the mastoid muscles and the trachea compressing the internal jugular veins. The successive steps of this motion are well shown in the accompanying diagrams constructed under the direction of Dr. Jacoby, and by his kind permission reproduced from his plates.

93. A third method of neck massage is that described by Weiss as being useful in children and persons having long delicate necks. We quote from Dr. Jacoby's work the description of this motion. "The operator places himself opposite his patient, joins the fingers of his hands behind the cervical spine, and then with the thumbs performs stroking movements downwards, the movements being slow and gentle, and afterward more energetic. The thumbs are thus moved from the inferior maxillary downward to the clavicle, stroking partly the region of the internal jugular vein and partly the lateral regions of the neck. The clavicles having been reached, the thumbs are lifted and carried back to the starting point without touching the neck."

94. A fourth method of neck massage is Gerst's modification, where the patient must apply the manipulation himself. In this case the patient bends the head backward, places the palm of his hand with

the fingers flexed against the neck so that the thumb is upon one side and the four fingers upon the other. The anterior part of the neck is then compressed somewhat forcibly, and the hand is passed with a

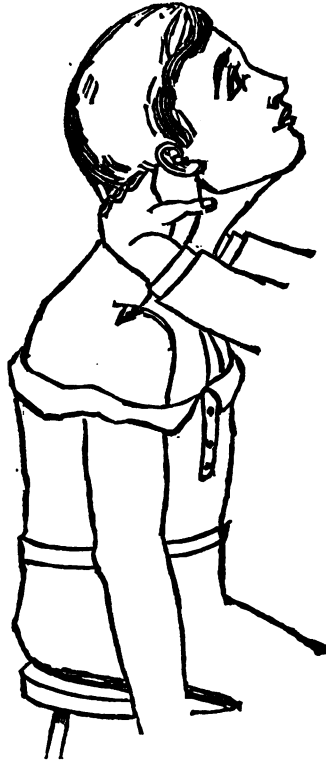


Fig. 7.

MASSAGE OF THE NECK.—WEISS.

For Children and Persons with Long, Delicate Necks.

stroking motion downward, the other hand succeeding the first, rapidly, in the manipulation.

95. In neck massage a disadvantage will be encountered in the fact that close pressure over the region of the internal jugular will irritate the laryngeal nerves and cause cough in some cases. To obviate this difficulty pass the thumbs or fingers alternately down one side and then the other. The larynx will be thus simply displaced without compression.

96. In the course of neck massage faintness may also occur in rare cases. This will be due to the cerebral anemia produced by the manipulation. When faintness is apparent the patient should be placed in the recumbent position and the manipulation suspended.

97. Neck massage may be used in the treatment of headache from cerebral congestion, in a number of other brain affections, in tonsillitis, in catarrhs of the throat, nose, larynx and ear, in cutaneous wounds of the scalp, and fractures of the skull; also, in erysipelatous inflammations of the face and acne.

98. Applications of neck massage may be made three times daily, of ten minutes each.

99. Self-application, while inferior to the two hands of a skilled manipulator, may be quite effective. Dr. Gerst mentions using it in his own person whenever threatened with a nasal or laryngeal catarrh. Toothache may be, at least temporarily, relieved; while headache and other phenomena of cerebral congestion may be ameliorated by its means.

100. **MASSAGE OF THE BREAST** is employed in cases of obstruction of the milk ducts or "caked breast."

101. In massage of the breast we combine kneading with effleurage. In kneading the breast, both the first and second motions of deep massage may be employed, the cake or tumor being the part especially subjected to treatment. Kneading should be

alternated with the stroking motion, as in other parts.

102. In effleurage the breast is grasped with the thumb and forefinger about an inch from the nipple, the motion being toward the nipple in all cases. It will be obvious that this motion is precisely that employed in milking cows. Plenty of vaseline should be used.

103. From fifteen minutes to two hours may be advantageously employed in breast massage. If effectively performed, the breast is relieved of the accumulated milk and the application does not have to be repeated. One should not be discouraged in this manœuvre because the patient insists that the breast contains no milk. Wherever there is hardening of the tissues milk can usually be obtained and complete relief will follow.

104. As a contraindication to the use of breast massage may be mentioned inability to express milk. "Rubbing" without the expression of milk invariably does harm. As a second contraindication, suppuration should be mentioned. Massage is a prophylactic effort, useful, as a rule, only during the first three days of breast symptoms. The initial chill and fever do not, however, contraindicate its use. Even after a considerable elevation of temperature prompt resolution may follow an hour's massage.

105. It is apparent that while a skilled manipulator may almost eliminate abscess of the breast from the list of puerperal discomforts, a poor manipulator can, on the other hand, precipitate this accident and do incalculable harm. This fact explains the almost universal opposition of physicians to the treatment. As a third and most important contraindication of breast massage is, therefore, the absence of a direct order for its application from your physician.

106. To become skilled in breast massage, special

practice in an obstetric ward is required. Hospital practice is essential, because there the results of your inexperience can be speedily corrected. You should many times have succeeded in cases under the eye of a skilled physician before essaying massage in the case of a private patient, or one separated by 12 or 24 hours from her doctor's visit. So pronounced, however, is the relief given by the successful treatment that it would appear as though every hospital nurse should have this practice as a part of her obstetric training.

107. **MASSAGE OF THE ABDOMEN.** This application of massage is advised for dilatation of the stomach and for habitual constipation.

108. The motions of abdominal massage were given in connection with general massage (§§ 62-64). With the patient upon the back take up and knead the skin between the thumb and index finger by the first motion of superficial massage (§§ 3). Next take up the subcutaneous tissues also using the palms of the two hands where there is a great deposit of fat. Knead the contents of the abdomen by the second motion of deep massage (§§ 15-18). This motion consists in compression of the parts against the underlying surfaces by means of a downward pressure not unlike that used in the kneading of bread. In massage of the abdominal organs it will be found most convenient to use the outspread fingers of the nearer hand and the palm of the further hand alternately. In massage of the abdominal organs the motions should be slow and care should be taken to avoid abruptness in the alternations. The pressure should gradually increase and then gradually diminish in intensity before the hand is moved to another part. In this motion the operator may stand with the knees braced against the side of the bed so as to balance the weight of the body upon the outstretched

hands. Gravity thus assists in the performance of the work and an equable pressure is obtained. The object of this motion is to accelerate the circulation of the blood in the abdominal organs and to excite peristalsis in the intestinal muscular layer. These muscles belong to the group of the involuntary muscles. They appreciate stimulation and respond to it very slowly. Hence, to give the best results the impression must be prolonged, the hands must not be rapidly moved from one part to another. To reach the colon with massage, place the fingers under the small of the back and with the thumbs extended upon the anterior abdominal wall include the trunk so far as possible in your grasp and apply to it the first motion of deep massage, kneading it as though it were a great thigh or arm. Where the patient can lie upon the face a very effective addition to the described motions will be found in work upon the sacral and lumbar regions. Here the ascending and descending colon may be readily reached, one hand being applied upon each side of the spine. Finally, finish with tapottement, applied over the sacral and lumbar regions with the doubled fists, the extended ulnar border or the hollowed hand. The bladder should be emptied in all cases before applying abdominal massage.

109. Abdominal massage may be used for from fifteen to thirty minutes one, two or three times a day. Berne* applies massage for twenty minutes once a day for constipation and in 18 to 30 days obtains a cure. Eccles,† on the contrary, uses massage for dyspepsia two or three times a day. Berne's method corresponds very nearly with that given here; while that of Eccles adds percussion of the abdominal wall as an important element in the treatment.

* Berne—*Jour. de Med. de Paris*, Jan. 2, 1887.

† Eccles—*Br. Med. Journal*, Sep. 3, 1887.

110. Contradictions to the use of abdominal massage are found in the presence of inflammations, such as peritonitis, tumors, pregnancy and calculi of the urinary and gall bladders, although even in these cases epigastric massage may be sometimes advantageously employed.

111. Unpleasant symptoms are not infrequently associated with abdominal massage. The first applications are apt to be disagreeable to the patient on account of the peculiar sensitiveness of the skin of the part. The undervest should be retained between the hand and the skin at least for a time in such cases. Berne tells us that in many of his cases the first applications were followed by pain which persisted for a number of hours. The nurse is advised to avoid manipulations which produce pain, to use greater gentleness and to be satisfied with the more gradual accomplishment of her result. Eccles tells us further that he has found a considerable degree of depression following abdominal massage, the pulse being lowered from 20 to 30 beats in some cases and the hands and feet being left cold. This result is not referred to by any other writer in connection with abdominal massage and it occurs to us that the cause is to be sought in the peculiarities of Eccles' method, among which percussion is the most prominent. Percussion powerfully affects the nervous system. Of all the motions of massage, Jacoby† ranks it first in importance in the treatment of nervous disorders. The abdominal reflexes powerfully affect the heart. A blow upon the epigastrium is, as we all know, frequently fatal by directly inhibiting or depressing the heart. Abdominal skin reflexes can diminish the pulse. This was distinctly proved in a series of experiments conducted by the author|| with the

† Jacoby—l. c.

|| Post—N. Y. Medical Record, Sep. 30, 1882.

faradic brush. This instrument applied to the skin of the back or the abdomen increased blood pressure and lowered the pulse in some cases ten beats. In these cases it was supposed that local reflex contraction of the blood vessels of the abdomen occurred with increased arterial pressure, which in turn produced according to the laws of the body slowing of the heart. That there was no general contraction of arteries is proved by the fact that the hands and feet remained warm and the general feeling was one of "bien-etre." In Eccles' cases we can only suppose a more profound impression causing general vaso-motor stimulation with phenomena resembling those of chill. The advantages of such an uncomfortable result are difficult to understand. We would therefore not adopt his abdominal percussion except cautiously and in cases where confidence had been already assured.

112. MASSAGE OF THE PELVIS is now applied by a number of reputable physicians, among whom are Dr. Reeves Jackson,* of Chicago, and Dr. H. T. Boldt,† of this city. It is used for relief of displacements of the uterus, rectocele, cystocele, prolapse of the rectum, floating kidney, incontinence of urine, due to relaxation of the sphincter, and in the various chronic and sub-acute parametric inflammations.

113. Massage of the pelvis is performed with the right hand upon the hypogastrium, the index finger of the left hand being in the vagina to exert counter-pressure and to steady the part. In some cases the thumb of the left hand is placed in the vagina and the index finger in the rectum, where a large exudation is to be removed.

114. Applications of pelvic massage may vary

* Jackson—Tr. Am. Gyn. Ass'n, Vol. V.

† Boldt—Am. J. Obst., Vol. XXII., No. 6, 1889.

in length from three minutes to three-quarters of a hour. It is not probable, however, that nurses will for the present at least be required to undertake this treatment.

115. **MASSAGE OF THE COCCYX** is used for periosteal and articular pain.

116. Massage of the coccyx is performed with the index finger of the right hand in the rectum and the left hand over the sacral or coccygeal regions in the back. The hands should be thoroughly cleansed before undertaking this manoeuvre.

117. In massage of the coccyx the two hands are simultaneously employed, the second motion of superficial massage being used. In this manipulation the internal surface may be found œdematous, and the articulation between the sacrum and coccyx tender. Enlarged lymphatic vessels and lymphatic glands may also be found upon the internal surface of the bones. Proceed gently in these cases, and with the dissipation of the lymphatic engorgement pain and tenderness will be relieved.

118. Massage of the coccyx may be continued from fifteen to thirty minutes and repeated daily or twice daily, as required.

119. **MASSAGE OF THE LIMBS*** is used for the exudations of bruises, contused wounds, sprains and fractures. It prevents the organization of lymph, the formation of adhesions, and, in fractures, also, limits the amount of callous and the subsequent distortion.

120. Massage is applied for surgical injuries three or four times, a day, fifteen minutes each time.

121. Effleurage is the essential element of surgical massage. In the case of a bruise, with extravasation, but with unbroken skin, the whole surface of the part is subjected to the treatment. In the case of

* Gerst—Ueber den. Ther. Werth der Massage, Würzburg. 1879.

wounds and fractures, however, effleurage is applied above the bandage only, especial care being taken to empty the principal veins. In all the forms of local effleurage vaseline should be liberally used.

122. MASSAGE OF THE HAND AND ARM has been used in "writers' cramp."

123. In massage for this purpose, treatment is applied twice daily and continued for from two to four weeks. Passive, resistive and active movements are combined with the massage in this treatment.

124. MASSAGE OF THE EYE* is used by some ophthalmologists in affections of the conjunctiva, cornea, sclera and ciliary body.

125. In ordinary applications to the eye, the lids should be gently closed and drawn a little tense by the fingers of the operator and then lightly stroked by quick passes of the thumb, index finger or a cotton pledget. Corneal and circumcorneal lesions may be rubbed by a circular motion. In the case of the lids, the movement should be from the internal to the external canthus along the upper or lower margin of the cartilage, and continued out and down the cheek along the course of the vessels. It should be employed at intervals of one to three days.

126. Massage of the eye is contraindicated where persistent redness of the conjunctiva follows its use. All injection caused by the treatment should disappear in the course of a half hour. The operator's hands and nails should be cleansed with soap and brush previous to this treatment.

127. SYSTEMIC RESULTS OF MASSAGE.—It has been noted that massage of the abdomen increases the urine in both its solid and liquid constituents. Massage of the lumbar region in the back entirely fails to produce this result. Massage of the limbs also

* Pouloubrouski—Bull. Gen. de Ther., Oct. 15, 1889.

increases the amount of the urine. This fact has been demonstrated in experiments upon dogs. The hind legs were massaged in these cases and the quantity of urine eliminated rose during the first few minutes to two, three and five times the usual quantity. Various precautions, taken to avoid error, showed that the increase was due, not to the increased quantity of the venous blood brought to the kidneys, but to certain component elements. The increase of urine lasted only a few minutes, although the massage might be continued for a considerable time. Bum* supposes the exciting cause to be the fatigue products of the muscle. If, after exhausting the capacity of massage for producing this increase, the muscles of the limb were tetanized for a few minutes, massage would again result in an increased flow. In the elimination of fatigue products we have, perhaps, one of the most important results of general massage. Among the Sandwich Islanders when a swimmer is seized with cramp or exhaustion in the water, his comrades gather about, sustain his weight, and by passes of their hands over his limbs restore his lost vigor.

Increased electrocontractility is produced in the muscles by massage; that is, a weaker current will produce a contraction after its use.

Diminished circumference of the limb treated has been noted by Eccles† and by Graham,‡ a difference of three-fourths of an inch having been obtained in the circumference of the thigh after ten minutes of deep kneading. An increase of general temperature, amounting to .6 to 1 degree F., has been reported: also, increased temperature in the limb massaged.

* Bum. *Ztschr f. Klin Med.*, 1889, XV., p. 248.

† Eccles—l. c.

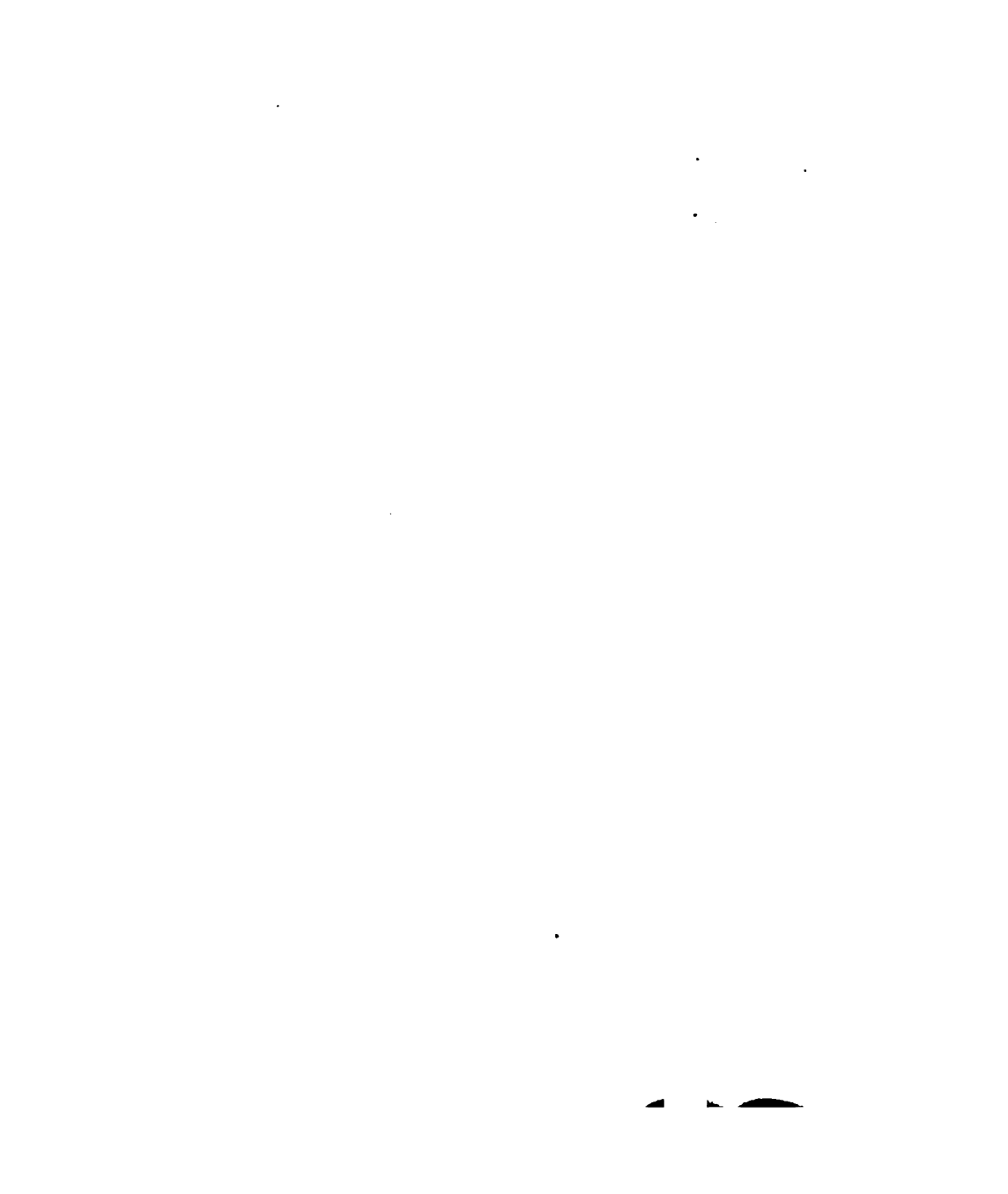
‡ Graham—*Treatise on Massage*, New York, 1884.

Massage increases absorptive power in the peritoneum, and v. Mosengeil* has shown that lymph and waste products can be forced out of a joint by its use.

Improved appetite, digestion and assimilation are common results of massage. An increase in weight is frequently observed, and sleep is also more restful after its application.

To recapitulate—massage may be used for the assistance of the venous circulation in stasis or hyperemia, such as is found in cases of weak heart and in local congestions and inflammations. Massage may be used to dissipate œdema and lymphatic engorgement, such as is found in the various forms of dropsy, the earlier stages of inflammatory swelling and the more common water-logged conditions characterized by excessive fat. Massage may be used for the removal of fatigue products in conditions of overwork, and in no other class of cases is its efficacy more promptly shown. Massage has also apparently a directly stimulating effect upon muscle fibres, increasing their contractility. Percussion has further a directly stimulating effect upon the activity of nerve cells. It is apparent that in massage we have a stimulating mechanical agent which can be made of the highest practical value in neuresthenia, the muscular weakness of convalescence and the debility of chronic diseases of the heart, kidneys and liver. It is applicable also to surgical injuries, such as bruises, sprains, fractures, the muscular weakness of club-foot, lateral curvatures and the like.

*v. Mosengeil Arch. f. Klin. Chir., 1876, XIX., p. 428.



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