The art of massage / by A. Creighton Hale.

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A. OREIGHTON HALE.

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BY

A. CREIGHTON HALE

PROFUSELY ILLUSTRATED WITH ORIGINAL DRAWINGS

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DEDICATION.

To my Numerous Pupils, now scattered in all parts of the World, I dedicate my Little Book with every good wish for their Personal Welfare and the Success of the Work in which we are mutually interested.

A. C. H.

PREFACE.

WHY England should have been so many centuries behind Sweden, China and India, with regard to Massage, is a mystery. However, awaking at last, we are showing every desire as far as possible to make up for lost time, for Massage is now progressing by leaps and bounds, having thoroughly gained favour with the most eminent medical men in England, who justly recognise that Massage, skilfully performed, will restore to perfect health poor sufferers who have long been regarded as confirmed invalids by both friends and doctors.

During my long experience, I have treated many such cases most successfully, and reflect on my work with the greatest pleasure.

A. CREIGHTON HALE.

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INTRODUCTION.

In response to the constant request that I should write a text-book on Massage, I make the attempt and claim indulgence from my readers. I do not pretend to lecture on the art, but will simply ask you to follow my hands from head to foot and from one member to another; not that I expect any one to understand (neither should I wish them to *imagine* they understood) Massage by reading any number of books, however clearly written, as I am convinced it is impossible the knowledge can be acquired without constant practical demonstration on a living subject, and I attribute the great success of my pupils to the fact that all my lessons are so given, taking care to explain the why and wherefore of every movement as I proceed. The main object I have had in view is to offer to my pupils and readers generally, a text-book of readable bulk which I believe will be found to contain all details of physiology, superficial anatomy, etc., necessary for an intelligent exercise of Massage, and moreover to

obviate the necessity of having Latin, French, and Medical Dictionaries at hand to understand what they are reading. I have taken the liberty of Anglicising the verb "to masse," considering it a rational description of the work effected; and, having adopted the treatment so largely in England, is it not time to adopt a word somewhat less involved (to an English reader) than "masséing"?

I must acknowledge my deep indebtedness to the able works of Drs. J. Kidd, Weir-Mitchell, Schreiber, J. Marshall, T. S. Dowse, Sir T. Watson, Maguire, K. W. Ostrom, and V. I. Murché for valuable suggestions.

A. C. H.

THE ART OF MASSAGE

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Chapter I.

ANTIQUITY AND USES OF MASSAGE.

Massage—a treatment which has been in use for many centuries in various parts of the world: in China, Japan (where it is exclusively practised by the blind, whose delicate sense of touch would seem to specially fit them for the work), in India, in the baths of ancient Rome, in the Sandwich Islands (where it is termed "lommi-lommi" and is performed on a wearied guest as an act of hospitality), in Turkey, in the Turkish baths in various parts of Europe, and abroad—hygienic massage has for many years been performed with most beneficial results.

It is but comparatively lately that the treatment, especially its therapeutic branch, has been seriously taken into consideration by the most distinguished physicians of Great Britain, Sweden, France, Germany and America. That eminent specialist, Dr. Weir-Mitchell, who has, in all probability, been mainly instrumental in establishing massage in favour in this country, states that he first saw general massage used by a charlatan in Philadelphia, in a case of progressive paralysis, and with such excellent temporary results that he was tempted to employ it

experimentally in a case of locomotor ataxia, and his experiment meeting with signal success, he has adopted the treatment scientifically with extremely satisfactory results.

We will consider massage as being divided into three branches, namely :—

I. General hygienic massage.
II. General therapeutic massage.
III. Special therapeutic massage.

The first, general hygienic, is for the purpose of "retaining to a person in good health the equilibrium of the functions by stimulating and reviving all without amplifying any".

The second, general therapeutic massage, is for the object of reviving and exciting the vitality of such organs, or functions, as seem to be nearly extinct.

The third branch, special therapeutic massage, is for the treatment of fractured limbs, dislocated joints, and local disorders which do not affect the entire system.

I gather from my own experience, as well as from various reliable authorities, cases, some of them considered almost hopeless, which have derived the greatest possible alleviation, and in the majority thorough and permanent cures, from a careful and patient use of massage, in many instances used in connection with electricity.

These, being of general interest, I subjoin. The physiological effects of massage in cases of impaired circulation, writers' cramp, contracted muscles and joints, obesity, relaxed throats, and the early stage of pulmonary phthisis, are described by Dr. Schreiber as "causing an increased flow of blood to the muscles

and soft parts, thereby increasing the circulation and removing accumulations of waste tissue, whose retention causes various disturbances of functions. As strengthening muscle fibres and by setting up molecular vibrations to induce changes, not only on the muscle and nerve fibres, but perhaps even in the nerve centres themselves."

In cases of dropsical effusions, white swellings, tumours and hæmorrhoids, massage "causes the resorption of exudations, transudations, and infiltrations in such organs as are accessible. It effects the separation of adhesions in tendon sheaths and in joints, without recourse to the knife, and removes by grinding away intra-arthritic vegetations."

In cases of gout, neuralgia, and rheumatism, which seem to bear a certain sort of relation to each other (and often collectively accompany diabetes), the effect of the treatment is "to increase, by passive and active exercise of all the muscles, the oxidising powers of the blood, in this way correcting disturbances in its composition and stimulating all the vegetative processes".

In cases of diabetes, constipation, cerebral congestion, and uterine disorders, massage "relieves the congestion of such internal organs as the brain, lungs, intestines, uterus, kidneys, etc., by increasing the flow of blood to the muscles".

In cases of paralysis, hysteria, deformities, and tenderness of the spine, nerve prostration, sciatica, lumbago, dyspepsia, and irregular menstruation, the effect of the treatment is "to stimulate directly the sympathetic nervous system, thus increasing secretion, and reflexly the activity of unstriped muscle fibre and so relieving various functional derangements".

In sprains and fractures, massage "educates the morbidly affected muscles by systematic exercise, and converts abnormal into normal actions".

So we see that these numerous and varied disorders can, with patience and strict attention to many minute details, which at first glance might seem of but little importance, be made to yield to a persevering course of massage, combined with electricity and a strict regimen.

Chapter II.

THE MASSEUSE, AND QUALIFICATIONS NECESSARY.

To be a successful masseuse, one of the first things to be considered is the suitability of the hands for the work proposed. Those best suited by nature are broad, smooth, subtle hands, of a comfortable temperature. These, I repeat, are best suited by nature; still, those whose hands do not exactly come under this category are not to despair, as good training can overcome many obstacles. The temperature must, of course, greatly depend on the state of the health of the operator and is not by any means to be overlooked, for what can be more distressing to a nervous patient than the application of cold or clammy hands? This condition would indeed render massage an ordeal to be dreaded by the sick and querulous, instead of the soothing alleviation it should be under favourable conditions.

Other essential qualifications are: a certain knowledge of anatomy and physiology, punctuality (a royal virtue), patience and thoroughness, strict cleanliness in every detail, and a silent tongue.

Patients who are, perhaps, nervous, or irritable under suffering, or hysterical, are so apt to ask many questions concerning their symptoms or progress,

which the masseuse would be very reluctant to answer truthfully for fear of increasing their patient's mental depression, and yet would be quite unwilling to deceive deliberately. In such case a graceful apology might be made to the effect that "it is so fatiguing to talk whilst massing, and that all one's strength and best efforts are needed for the work in hand". By thus temporising, the masseuse will frequently be enabled to glide away from a dangerous subject to the benefit of the patient.

Massage cannot be described as easy. It takes some time to perform manipulations, even of the most simple kind, with effective dexterity. The skill which leads to perfection can be acquired by determination and perseverance, and having once thoroughly mastered the manipulations, keep yourself in constant practice, or, in common with the musician and other handicraftsmen, your hand will forget its cunning. Bring your reason to bear on every movement, and carefully gauge your patient's resisting power. The best effects are brought about by almost painless manipulations. Be zealous in carrying out fully and faithfully the minutest details of your work.

Dr. Weir-Mitchell gives such sound and pithy advice to nurses who may be called upon to take charge of certain cases of hysteria (and from my own experience I think his remarks so applicable in various other instances) that I cannot do better than give you his own words. "It is always to be borne in mind that most of these patients are over-sensitive, refined, and educated women, for whom the clumsiness, or want of neatness, or bad manners, or immodesty of a nurse, may be a sore and steadily-

increasing trial. To be more or less isolated for two months in a room with one constant attendant, however good, is hard enough for any one to endure, and certain quite small faults or defects in a nurse may make her a serious impediment to the treatment, because no mere technical training will dispense in the nurse any more than in the physician with those finer natural qualifications which make their training available."

Moreover, let there be no fuss; a quiet self-possessed demeanour, patience, and tact should be carefully cultivated as valuable adjuncts to the manual work and will give us the charming result —a most desirable and successful masseuse. Avoid jingling bracelets and rings, which are most irritating. Keep yourself carefully in health, and husband your strength that you may be enabled to do justice to your patient and to yourself.

Chapter III.

STRUCTURE AND FUNCTIONS OF THE BODY.

The results of massage being essentially vital, we must at the outset devote our best attention to the marvellous mechanism of the frame and tissues on which we operate. In the anatomical and physiological portions of this little work, I shall endeavour to be as practical and simply explicit as the complicated nature of the subject will permit, as I am well aware that, to the majority of students who may possibly peruse it, and especially to members of the nursing profession (who have formed the majority of my pupils in the past), it will be a boon to have at hand a simple, practical text-book of readable bulk, by which they can either prepare themselves for their course of instruction, or refresh their memory at intervals when that course is completed. That we may be enabled to use any remedial agent to the utmost advantage, we must have a perfect knowledge of its range of action. To do this we must at the outset consider the structure of the human frame.

Structure of the Body.

Bones are divisible into four classes : namely, long, short, flat, and irregular.

The *long bones* are found principally in the limbs and consist of a shaft and two extremities, which

are expanded to articulate with adjoining bones. They are: the clavicle, humerus, radius and ulna, femur, tibia and fibula, metacarpal bones, metatarsal bones, phalanges and ribs.

The *short bones* are: the vertebræ, coccyx, carpal and tarsal bones, patellæ and sesamoid bones.

The *flat bones* are: the occipital, parietal, frontal, nasal, lachrymal, vomer, sternum, scapulæ, and ossa innominata.

The *irregular bones* are: the temporal, sphenoid, ethmoid, superior maxillary, inferior maxillary, palate, inferior turbinate bones, os hyoides, and sacrum.

Bones are invested by a dense, fibrous membrane, termed the periosteum, covering every part of their surface with the exception of the articular extremities, which are coated by a thin layer of cartilage.

Lining the interior of the medullary canal of long bones and the cells of short, flat, and irregular bones is the medullary membrane, which acts as an internal periosteum. These canals and cells are filled with a yellowish oily substance—the medulla (or marrow). The bones are further provided with proper blood-vessels and nerves, and subjected to incessant vital changes connected with their nutrition.

The skeleton comprises 246 distinct bones:—

Head,	8
Ossicles of the tympanum,	6
Face,	14
Teeth,	32
Vertebral column,	24
Os hyoides, sternum, and ribs,	26
Upper extremities,	64
Pelvis,	4

Lower extremities, ...	60
Sesamoid bones, ...	8
	246

The Head.

The head comprises the cranium, or skull proper, and the face.

The *cranium*, the smooth hollow part of the head, contains and protects the brain, the great centre of the nervous system. It consists of eight bones :—

1 Frontal.
2 Parietal.
2 Temporal.
1 Occipital.
1 Sphenoid.
1 Ethmoid.

The *frontal bone* forms the forehead and the roofs of both orbits or eye-sockets.

The *parietal bones* form the vault or crown of the cranium and a large part of its sides.

The *temporal bones* contain the deep parts of the organ of hearing.

The *occipital bone* forms the back part of the head and a large part of the base of the cranium, reaching sufficiently far forward to form the roof of the throat. It is by this bone that the head is joined to the neck.

The *sphenoid bone* (*i.e.*, "a wedge") is an irregular bone, situated at the base of the skull, wedged between the other bones of the cranium and entering into the formation both of the cranium and face. It resembles in shape a bat with its wings extended.

The *ethmoid* (*i.e.*, "a sieve") is a square-shaped bone, situated between the two orbits at the root of the nose and perforated upon its upper surface by a

number of small openings from which peculiarity it has received its name. The different bones of the cranium fit closely together at their edges, being in some places smooth, but in others jagged; they form at their juncture certain lines called *sutures*.

The *face* is more uneven than the cranium. It contains fourteen bones:—

2 Superior maxillary (upper jaw).
2 Malar or cheek bones.
1 Inferior maxillary (lower jaw).
2 Nasal bones.
2 Lachrymal bones.
1 Vomer or ploughshare bone.
2 Turbinated bones.
2 Palate bones.

The *superior maxillary* bones form the upper jaw, enter into the orbits, form the sides and chief part of the floor of the cavities of the nose and the greater part of the roof of the mouth, and contain sockets for sixteen upper teeth.

The *malar* or cheek-bones form the prominence of the cheek, assist in completing the orbit and help to ward off blows from the eyeball.

The *inferior maxillary* (or lower jaw) forms the chin and has sockets for sixteen lower teeth.

The *nasal bones* form the bridge of the nose.

The *lachrymal bones* are small, delicate bones near the nose, which, together with a part of the upper jaw, form what is called the lachrymal canal.

The *vomer* or *ploughshare bone* forms the lower backpart of the bony partition of the cavity of the nose.

The *turbinated bones* form the outer wall of the cavity of the nose.

The *palate bones* are situated at the back of the upper jaw bones and together with them form the palate.

The Trunk.

The trunk (Fig. 1) comprises the vertebral or

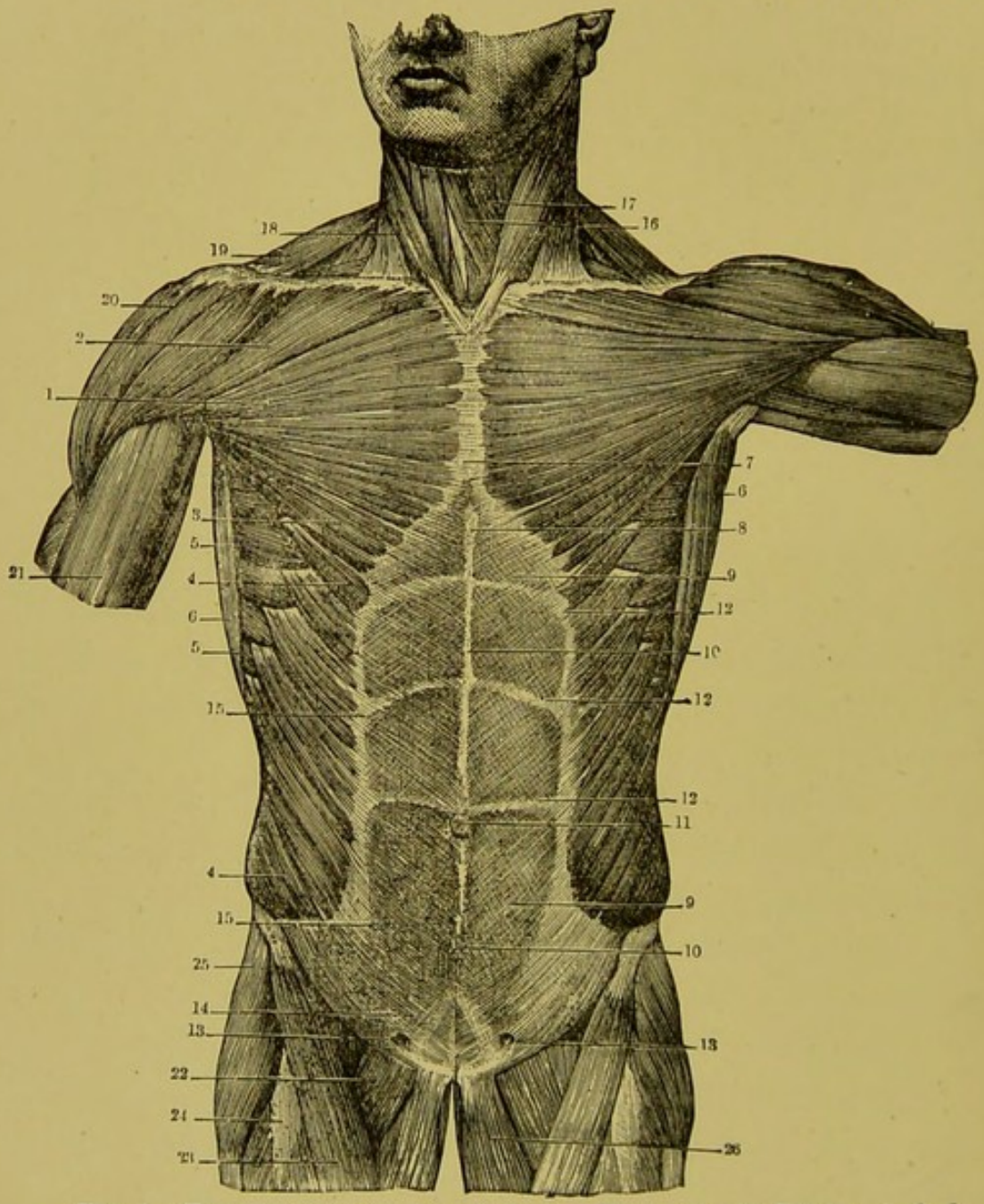

Fig. 1.—The Muscles of the Anterior Wall of the Trunk.—1, 2, 3, the great pectoral. 4, 4, the external oblique of the abdomen. 5, 5, the serratus magnus. 6, 6, the anterior border of the latissimus dorsi. 7, 8, the inferior portion of the sternum. 9, the aponeurosis of the external oblique. 10, linea alba. 11, umbilicus. 12, 12, 12, the tendinous intersections of the rectus abdominis. 13, the inguinal ring. 14, the pyramidalis of the abdomen. 15, the external border of the rectus abdominis. 16, the sterno-hyoid. 17, the omo-hyoid. 18, sterno-cleido-mastoid. 19, the trapezius. 20, the deltoid. 21, the biceps brachialis. 22, the pectineus. 23, the sartorius. 24, the rectus femoris. 25, the tensor of the fascia lata. 26, the adductors.

spinal column, the ribs, the sternum (or breast-bone) (Fig. 2), the scapulæ (shoulder-blades), the clavicles (collar-bones), and the ossa-innominata (hip-bones).

The *vertebra* (Fig. 3) reaches from the base of the

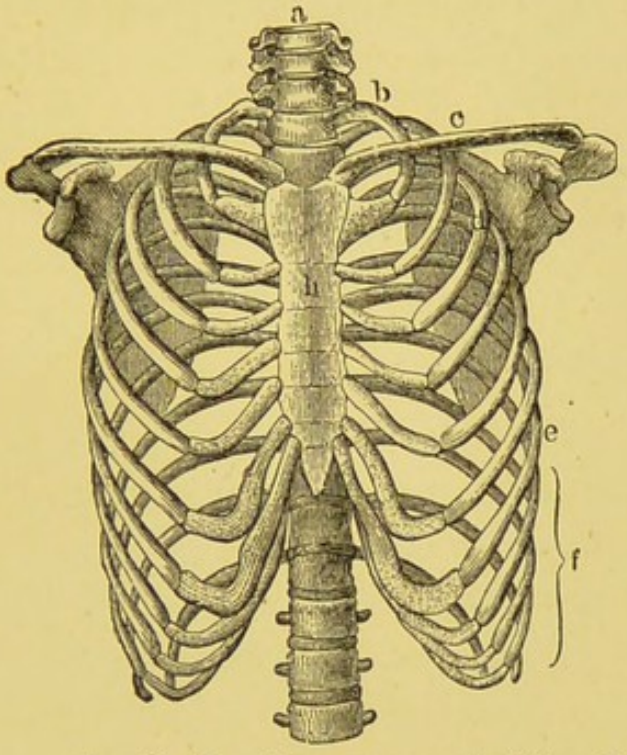

Fig. 2.—The Sternum.—c, clavicle. d, scapula. e, true ribs. f, false ribs. h, sternum.

skull to the lower end of the trunk. It consists of thirty-three small bones, the vertebræ. The joint nearest the skull (and which forms the articulation of the occipital bone) is named the *atlas vertebræ.* In this joint is a cavity through which a spinous process, or peg (known as the

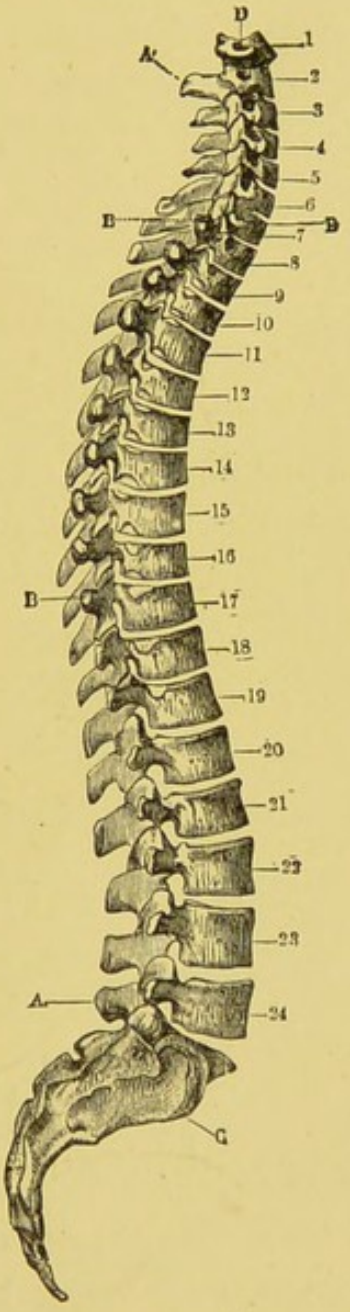

Fig. 3.—Vertebral Column (lateral view).—1 to 7, bodies of cervical vertebræ. 8 to 19, bodies of dorsal vertebræ. 20 to 24, bodies of lumbar vertebræ. A, A, spinous processes. B, B, articular surfaces of transverse processes for the tuberosities of the ribs. C, articular surface of sacrum.

odontoid peg, or process), passes from the second or *axis vertebra.* The two joints form the pivot on

which the head moves, and in conjunction with the next five vertebræ form the seven *cervical vertebræ*. Next come twelve *dorsal vertebræ*, forming the back; the five *lumbar vertebræ* forming the loins. Below these is the *sacrum* in which five vertebræ may be traced, and lastly, the *coccyx* which contains four pieces.

True vertebræ 24 { 7 cervical. 12 dorsal. 5 lumbar.

False vertebræ 9 { sacrum. coccyx.

In shape, the spine is curved, being convex forward at the neck, concave in the back, convex in the loins, and concave at the sacrum and coccyx.

The *spinal column* contains the spinal cord (Fig. 4) (or medulla spinalis), the roots of the spinal nerves, and the membranes of the cord.

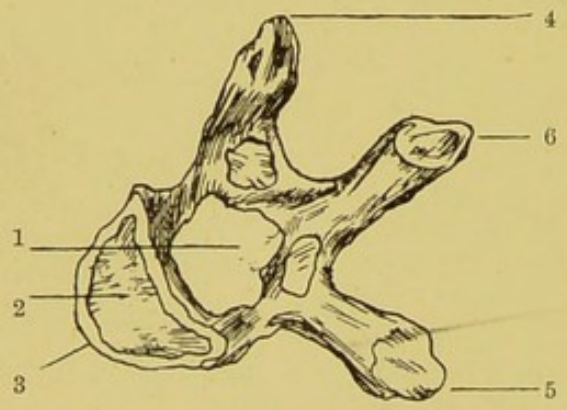

FIG. 4. — SECTION OF SPINE.—1, spinal canal. 2, pad of cartilage. 3, body of the vertebra. 4 and 5, transverse processes. 6, spinous process.

The *ribs* (or costæ) are twenty-four in number, twelve on each side. They are attached behind to the bodies and transverse processes of the dorsal vertebræ; in front they are continuous with gristly parts, or cartilages, termed *costal cartilages*. The seven upper ribs are connected by their cartilages to the breast-bone (or sternum), and are called *true ribs*. The five lower ones are not connected with the sternum and are called *false ribs*.

The *sternum* is a flat bone, consisting of three

pieces, shaped like an ancient Roman sword. It receives the cartilages of the seven upper or true ribs and the right and left collar-bones at its upper end. The lower end is tipped with a cartilage termed the *ensiform appendage.*

The sternum, the twenty-four ribs and their cartilages, and the twelve dorsal vertebræ form the cavity named the *thorax* or chest which contains and protects the heart, lungs, great blood-vessels, the œsophagus (or gullet), and the thoracic duct.

The *clavicles* (or collar-bones) are connected on one side with the top of the sternum, and have the scapulæ (or shoulder-blades) suspended to their outer end. These bones form the bases of support for the upper limbs.

The *hip-bones* (ossa innominata), right and left, form, together with the sacrum, a fixed base of support for the lower limbs. Originally composed of three pieces, they blend in an adult frame into one broad, irregularly shaped bone, but continue to receive different names, *i.e.* :—

(1) *Iliac-bone* (or ilium), the broad part which supports the flank of the body.

(2) The *pubic-bone* (or pubis), joined by ligament to its fellow.

(3) The *ischium* (or sitting-bone), on which the weight of the body is supported in the sitting posture.

These three join into one bone at the deep socket named the acetabulum, which receives the head of the thigh-bone.

The two hip-bones are most firmly attached behind to the sacrum, with which, and the coccyx, they thus form a very strong circle or hoop called

the pelvis (Fig. 5) or basin. They join together in front to form the pubic arch.

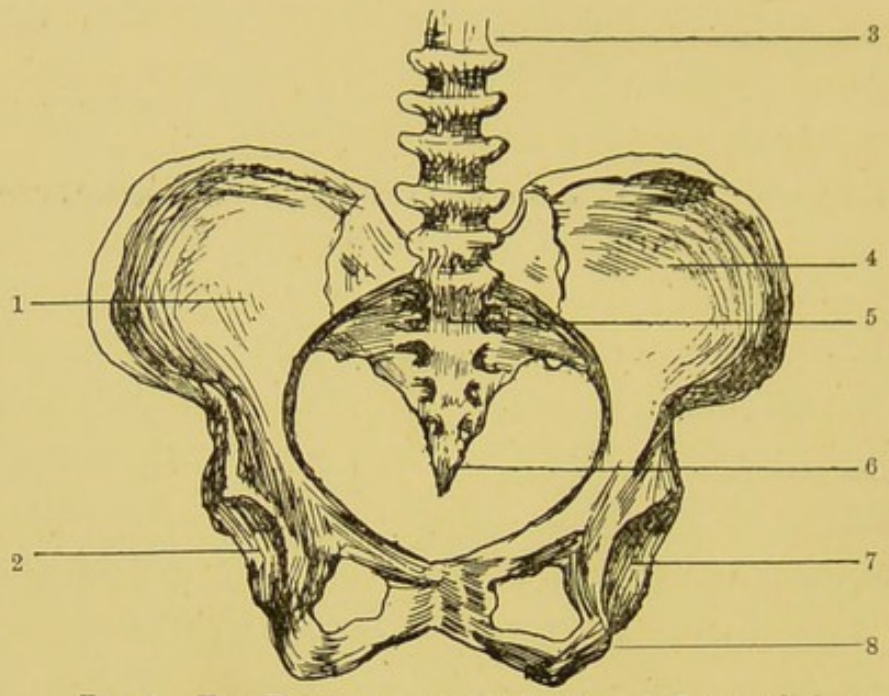

Fig. 5.—The Pelvis.—1, 4, hip-bones. 2, 7, acetabulum. 3, vertebral column. 5, sacrum. 6, Coccyx. 8, Ischium.

Between the thorax and the pelvis the skeleton is open in front, which gives room for continual variations in the capacity of certain of the abdominal organs.

The Upper Limb.

The *humerus* is the upper bone of the arm (Fig. 6). Its rounded head fits into the glenoid cavity of the scapula. Its lower end is flattened out and is joined at the elbow with the two bones of the forearm.

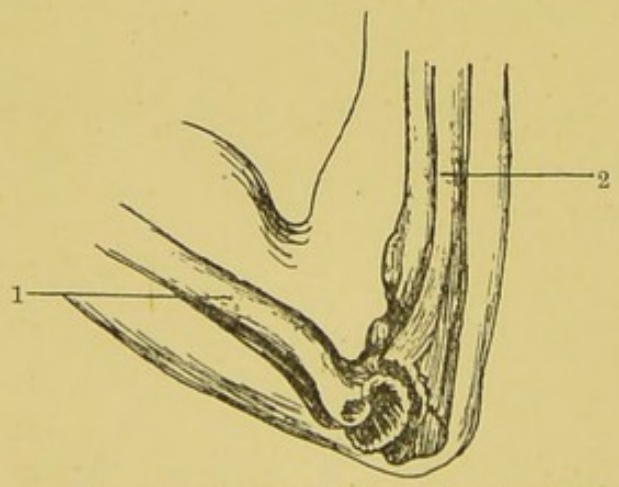

Fig. 6.—Elbow Joint.—1, humerus. 2, radius.

The *radius* is the outer bone of the forearm. The lower

extremity is large and forms the joint of the wrist. The upper extremity is small.

The *ulna* is the inner bone of the forearm. The upper extremity is large and forms principally the articulation of the elbow. The lower extremity is small and rounded.

The *carpus* (or wrist) consists of eight small bones (carpal bones) arranged in two rows. They give elasticity and great strength to the wrist. The first row (counting from the side of the radius) comprises the *scaphoid*, the *semilunar*, the *cuniform*, the *pisiform* or pea-shaped bone. The second row (beginning at the thumb) contains the *trapezium*, the *trapezoid*, the *os magnum*, and the *unciform* or hooked bone.

The five long bones of the *metacarpus* (metacarpal bones) form the broad part of the hand. The metacarpal bone of the thumb stands away from the rest, and has great freedom of movement on the trapezium bone of the carpus.

The *phalanges* are fourteen in number and form the finger bones, two for the thumb, and three for each finger.

The first in each finger is attached to the corresponding metacarpal bone and moves in several directions upon it. The others form the hinge joints only. The last supports the nail and is termed the *ungual phalanx*.

The Lower Limb.

The *femur* (or thigh-bone), the longest and largest bone in the body, corresponds with the humerus of the arm.

The large globular head is sunk in the acetabulum at the hip joint. The large projections below are the condyles.

The *patella* (or knee-pan) (Fig. 7) is a little bone

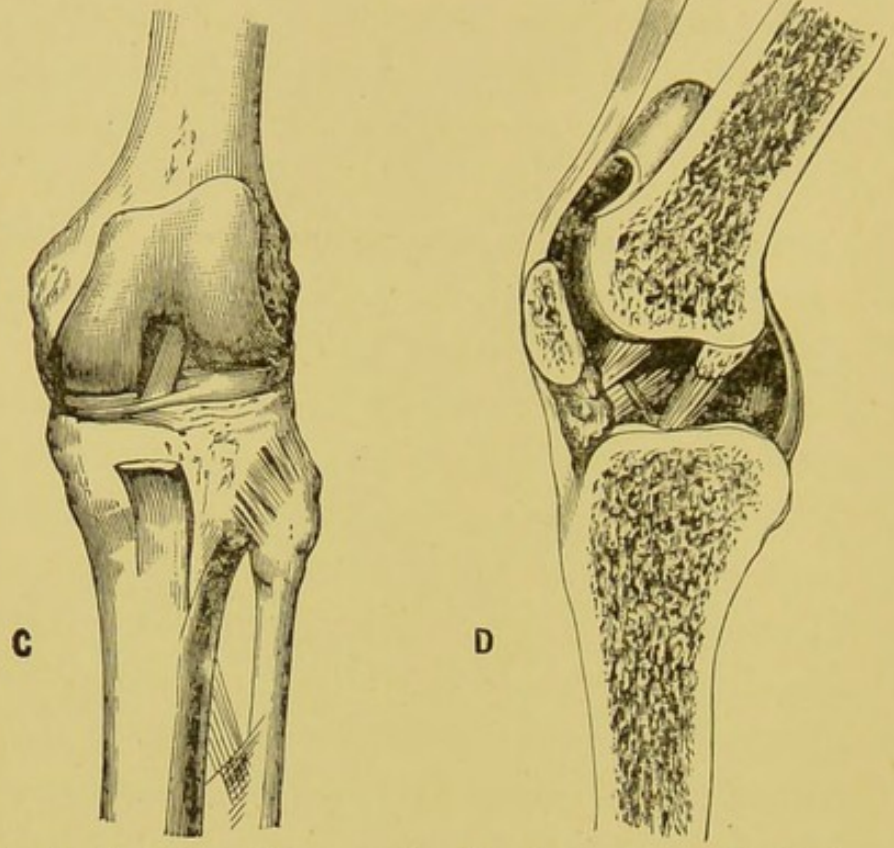

FIG. 7.—THE KNEE JOINT. THE KNEE JOINT (side view).

which protects the knee joint; it belongs rather to the muscular system than to the skeleton proper, being placed in the tendon of a muscle.

The *tibia* (or shin-bone) is the inner and larger bone of the leg. It enters solely into the knee joint above and forms the prominence of the inner ankle below.

The *fibula* (or splint bone) is the outer or small bone of the leg. It does not enter into the knee joint, but forms the outer ankle below. These two bones of the leg are fixed firmly together, and have no movement one on the other like the corresponding bones in the forearm.

The *tarsus*, or *tarsal bones*, are seven short strong bones. The highest one (the *astragalus*) alone enters

into the ankle joint; one large bone behind (*os calcis*) forms the heel. The rest (the *scaphoid*, the *cuniform* bones, and the *cuboid*) assist in the construction of the arch of the foot.

The *metatarsus* (or metatarsal bones) are five in number. They form the broad part of the foot and the support of each toe, that for the great toe being the strongest.

The *phalanges of the toes* are fourteen in number. The great toe, like the thumb, has two. The other toes three. They are shorter and smaller than the phalanges of the fingers.

Wherever the different bones or pieces of the skeleton meet, and are connected, joints (or articulations) are formed, thus imparting elasticity to the frame. There are three kinds of joints: the immovable, the mixed, and the movable.

The *immovable joints* are those in which two adjacent bones are fixed together at their borders, either by linear or serrated edges, as exemplified in the sutures of the facial and cranial bones. Sometimes they are dovetailed, sometimes they overlap, sometimes the edges fit like a tenon and mortise joint. Always a firm, thin membrane, continuous with the periosteum, passes between the adjoining edges and serves to hold them together and prevent shock.

The *mixed joints* are those in which two bones are opposed to one another by broad and somewhat roughened surfaces, which are firmly, but not immovably, held together by an intermediate substance of a mixed fibrous and cartilaginous texture named interoseous substance or ligament, and are strengthened outside by bands of fibrous

membrane which form the external ligaments. It is in this way that the bodies of the vertebræ join one another, as also the two pieces of the sternum, and hip-bones, and sacrum, and the hip-bones with one another at the pubic arch.

The *movable* kind include all the other joints in the body. In them, the opposed surfaces of any two bones are smooth and covered with a closely adherent layer of a firm elastic substance called *cartilage.* Attached to both bones all round the borders of the cartilages is a membranous bag or sac, closed on every side, called the *synovial membrane* or *capsule,* which contains a thick fluid named *synovia,* the purpose of which is to lubricate the joint. Outside this sac are strong fibrous bands of a dense whitish *inelastic* tissue, called ligaments, which strengthen the capsule and hold the bones more firmly together.

These movable joints differ very much in the form of their opposed surfaces; some have flattish surfaces and are capable only of gliding movements, as most of the small joints of the wrist and ankle. Others have pulley-like surfaces and a principal motion in two directions only, like a hinge, as the elbow, knee, wrist, ankle, and phalanges of the toes and fingers. Others have one surface like a *socket* and the other like a ball fitting into it, and possess free movement in all directions, as the shoulder and hip joints, and the roots of the thumb, fingers, and toes.

One set of ligaments, those which connect the back part of the rings of the movable vertebræ one with another, are not composed of *inelastic* fibrous tissue, but of a peculiar yellow tissue, called from its

property *elastic tissue*. Its presence facilitates the bending forward of the vertebral column.

Having now to a certain extent studied the mechanism of the frame on which we are to work, we will proceed to consider the details of general hygienic massage.

Chapter IV.

INSTRUMENTS AND MEDICAMENTS.

Instruments.

"The application of sentient living matter to sentient living matter in multifarious ways." Believing this to be the true definition of massage, I must at the outset acknowledge that I make use of no instruments whatever in my practice, as I consider that a masseur or masseuse who has been thoroughly trained to use the hands to the best advantage, who has good temperature, and a fairly developed biceps, can, by the intelligent application of manual frictions, percussions, pressures, and movements, obtain thoroughly satisfactory results, and, moreover, run no risk of *overdoing* the work, as might be the case when mechanical treatment is employed.

However, instruments have at various periods been employed, and a short description of them may not be out of place.

First, we have a glove (resembling in shape an infant's glove), the palm of which is composed of soft bristles and is used for frictional purposes.

The roulette is an instrument composed of several small wheels (of either wood or india-rubber), which are fixed to a handle and with which the muscles are rolled.

The palette, battoir, or percuteur, in shape like a battledoor made of very thin wood and perhaps

covered with gutta-percha, is used as a percussion instrument.

A flail made of the inflated bladder of a sheep or calf is also used for percussion purposes (Fig. 8).

A bundle of birch branches or twigs serves for flagellation (Fig. 8).

A flannel or horse-hair brush for friction (Fig. 8).

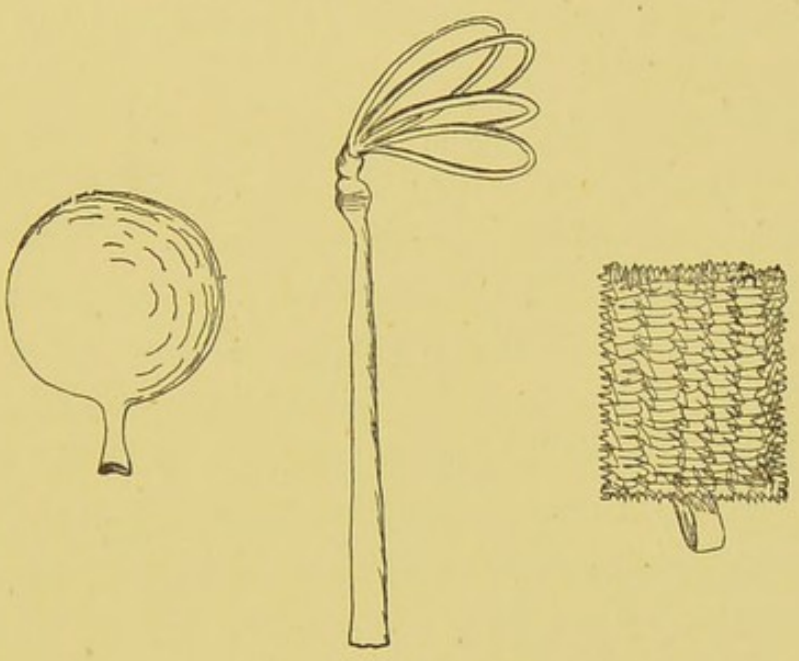

Fig. 8.—Instruments.

The strigil, a sickle-shaped instrument made of either boxwood, ebony, or metal, is used to scrape and cleanse the skin.

Medicaments.

"Where considerable energy and pressure are to be employed the skin should be washed with a spirit and ammonia lotion, which is also useful when treating a skin that is naturally coarse and greasy" (Dowse).

Weir-Mitchell recommends cocoa oil or vaseline as an unction.

An excellent lubricant may be made of equal parts of chloroform and castor oil to deaden the acute

peripheral pain in treating for neuralgia or inflamed joints.

Mercury is readily taken into the system through the medium of massage, and may be combined with the above lubricant when desirable.

A French author recommends phosphorus pomade where a special stimulus to the skin is desired.

Soap, balsam of opodeldoc, and castor oil are sometimes used.

For delicate young children cod-liver oil may be worked in with advantage, as it allays irritation, "promotes nutrition, renders the liver more active, and acts beneficially on the kidneys".

In treating writers' cramp, I have always found that placing the disabled hand in hot water and turpentine for some minutes previous to massing is of great advantage.

For sprains or distortions arnica, or oil and brandy may be used.

An antiseptic salve is also of use in certain cases.

As a general rule, I use, for hygienic massage, a slight lubrication of olive oil or cocoa-nut butter. It must be well rubbed off the skin before leaving the patient.

Some authors assert that working outside the clothes will save the patient's skin; but could anything be more soothing than the gentle application of a soft hand?

"Massage must always be used on the nude skin. To avoid abrasions use white vaseline or some other oleaginous substance" (Ostram). I so thoroughly agree with Mr. Ostram in this, that I would suggest that any physician, who insists on a masseur or masseuse rubbing without using anything whatever

to make the hand glide, should submit to the operation himself for an hour; then let him masse a patient for the same length of time with dry hands! I guarantee he would have given his last order for dry rubbing.

It amounts to this—one method is comfort; the other, torture to both patient and operator.

I will give a case in point. A pupil of mine was called in to masse a lady, who, on uncovering, had the appearance of suffering from eczema. The former cautiously remarked that there was "great irritation of the skin". The reply was: "Oh, no! there is nothing whatever the matter with my skin, it is simply how my former masseuse left me two days ago. She had orders from Dr. —— to dry-rub me, and the poor creature was in such a deplorable state of heat that the perspiration fell from her brow on to me, and she has left me so tender that I am afraid to put on my linen." This is no uncommon case, thanks to the absurd idea of dry-rubbing.

Chapter V.

MASSAGE MANIPULATIONS.

The movements and manipulations made use of and taught by me are: frictions, claquement, pincement, pétrissage, malaxation, hächure (or chopsticks), foulage, sciage, kneading, pointed vibrations, deep vibrations, flexion, extension, rotation, secousses, traction, frolement (or rolling), the tapôte (or flail), swooping, and the spider movement.

I could quote other movements mentioned by various authors, but consider that the above meet the requirements, and that a great complication of terms is to be deprecated.

We will now see what these different terms signify, and to what part of the body they are applied.

The term *friction* speaks for itself. It is performed with the flat extended hand (Fig. 9), the

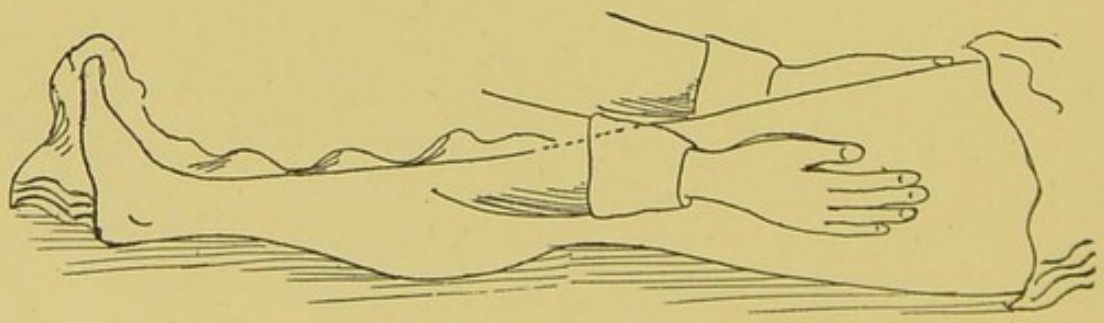

Fig. 9.—Friction of Thigh.

amount of pressure depending upon the part to which it is applied. It is used on the limbs, spine, scapulæ, head, thorax, and abdomen.

Claquement means literally "spanking," and is also performed with the flat extended hand, taking care to make use of the balls of the fingers, not the tips and nails. Claquement is applied to the limbs and back (avoiding the spine).

Pincement is "pinching," but not *severe* pinching. The fingers must be extended, kept close together, and stiffened somewhat, then take up between the fingers and thumb a small piece of the flesh just to the right of the spine, for instance, commencing at the sacrum; then a small piece immediately above it with the left hand, and so on, each hand working alternately until you creep quite up the spine to the axis vertebra. Pincement is principally used for the spine, the flexor muscles of the hand, and the intercostal muscles.

Kneading is a somewhat similar movement to pincement, except that a larger grasp of muscle is taken up. Use the hands alternately (Fig. 10), keep

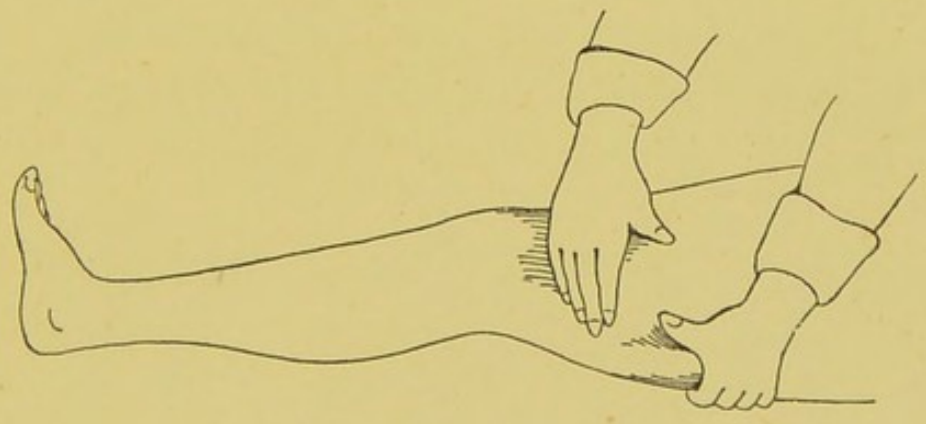

Fig. 10.—Kneading Thigh.

the fingers straight, taking special care not to pinch. Kneading is especially useful for the large muscle of the calf (gastrocnemius), for the thighs, the arms, certain muscles of the neck, the buttocks, liver and abdomen.

Pétrissage is pressure brought to bear on a muscle or tendon with a secondary movement to raise it up from its normal point of attachment. It is performed thus: Press the palm of the right hand on the muscles of the inner part of the thigh, for instance (Fig. 11),

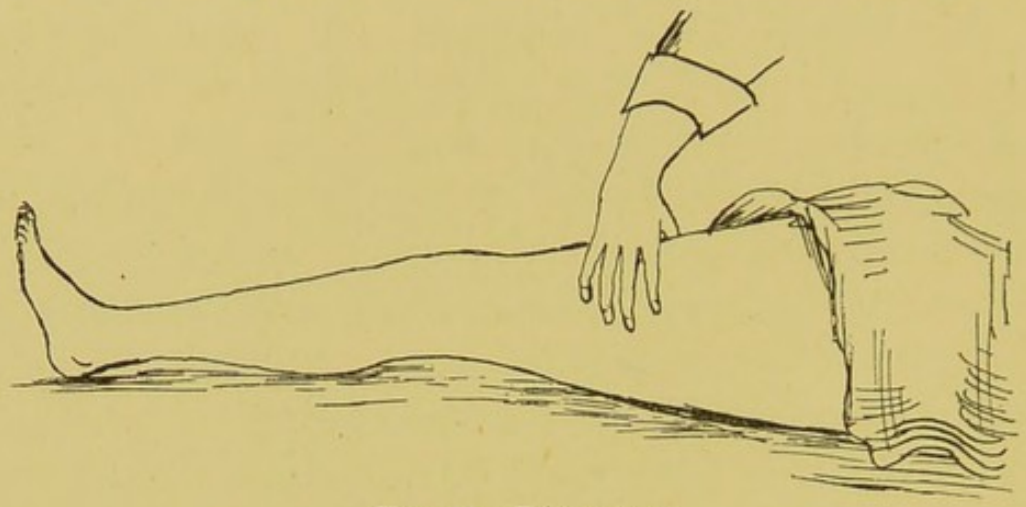

Fig. 11.—Pétrissage.

straighten and stiffen the fingers, then bring up or raise the muscle between the fingers and thumb, press and raise alternately.

Malaxation is practically the same movement, but requires the palm to be pressed much more firmly before raising the muscle between the fingers and thumb, thus causing a sort of suction movement.

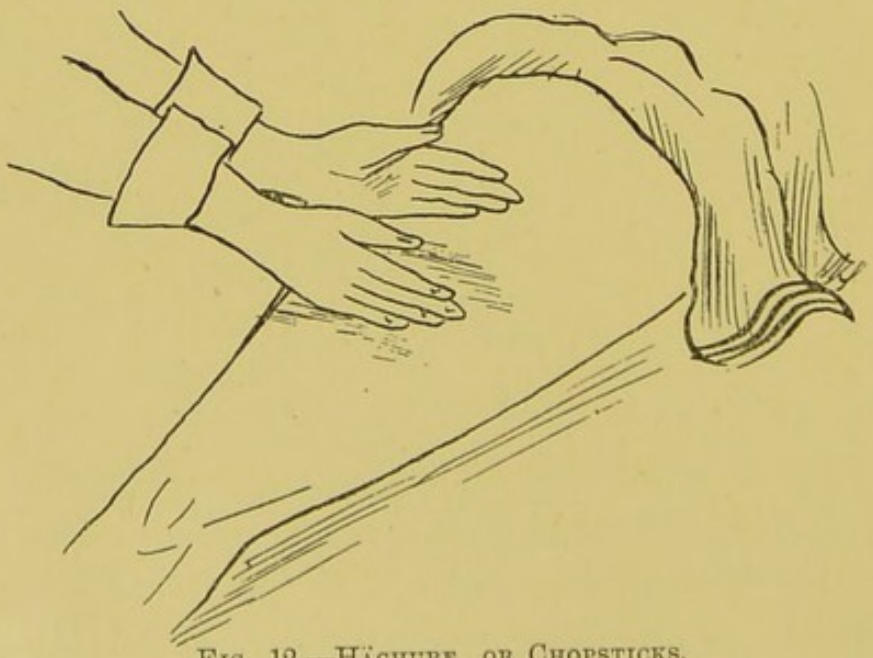

Fig. 12.—Hächure, or Chopsticks.

Hächure (familiarly spoken of as "*chopsticks*"). For this movement the ulnar side of the hands and little fingers strike the limb alternately (Fig. 12) and quickly. Used for the limbs, back, and shoulders.

Foulage we will exemplify on the thigh (standing on the right of the patient). Place the left hand down firmly at the top of the femur (thigh-bone) to protect the skin (Fig. 13). Extend widely the fingers

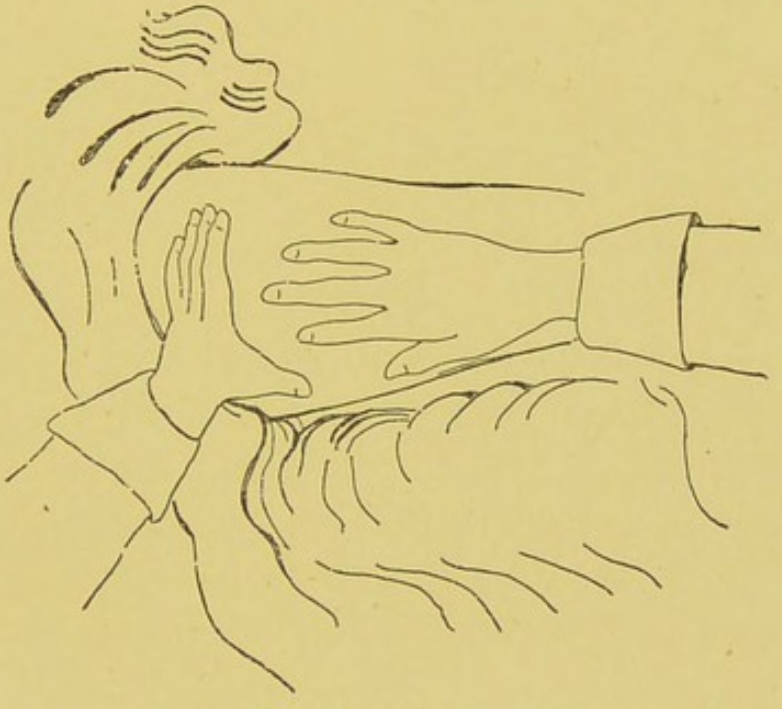

Fig. 13.—Foulage.

of the right hand and drag them down firmly (taking care the balls of the fingers are used, not the nails) from the top of the femur to the patella. This movement is repeated several times, altering the situation of the hands until the entire thigh has been worked over.

Sciage is a saw-like movement. We will again exemplify on the thigh, standing on the patient's right (Fig. 14). Place your left hand underneath the muscle of the inner part of the thigh just above

the knee; your right hand crosses above the other to embrace the muscles of the outer side of the thigh. Now press up the muscle held in each hand up over the bone, the hands crossing and re-crossing each other with a saw-like action, taking care the skin is not nipped by the hands meeting. Used on the limbs and buttocks.

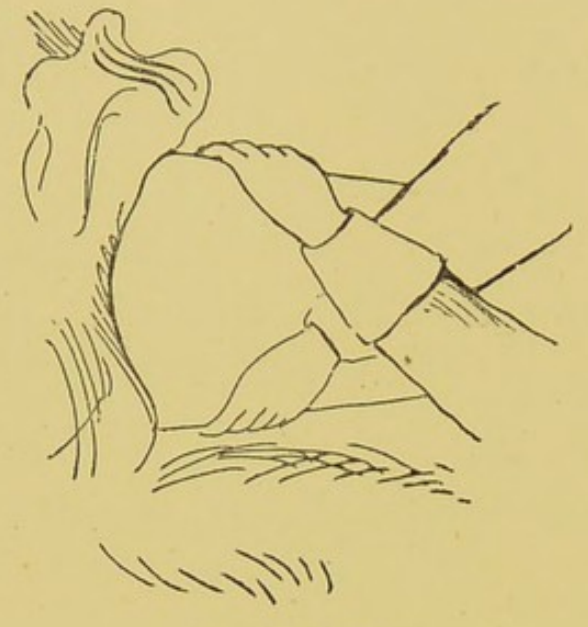

Fig. 14.—Sciage.

Pointed vibration signifies a percussion with the extended balls of the fingers, letting the hand move loosely and quickly from the wrist (Fig. 15).

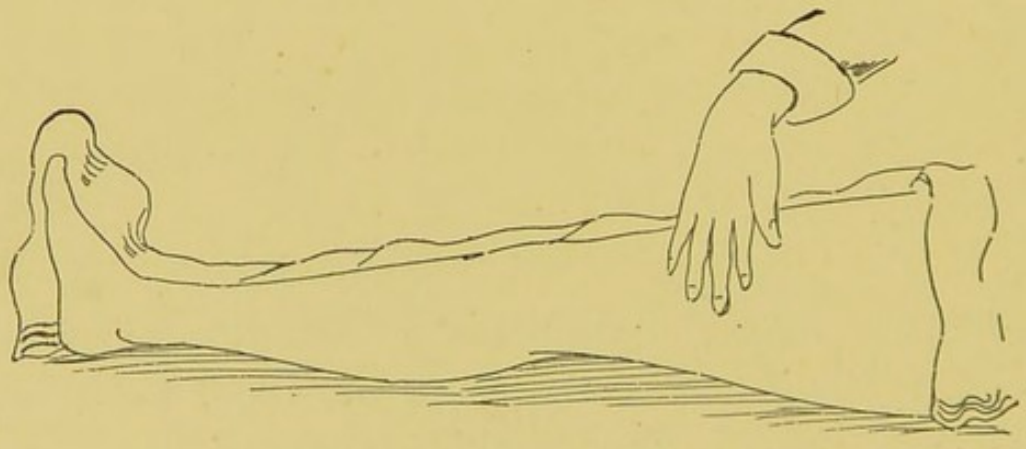

Fig. 15.—Pointed Vibrations.

Used on the limbs, shoulders, and back (avoiding the spine).

Deep vibration is a percussion given with the ulnar side of the clenched hand (Fig. 16). Used on the limbs only.

Flexion means flexing or contracting by bending,

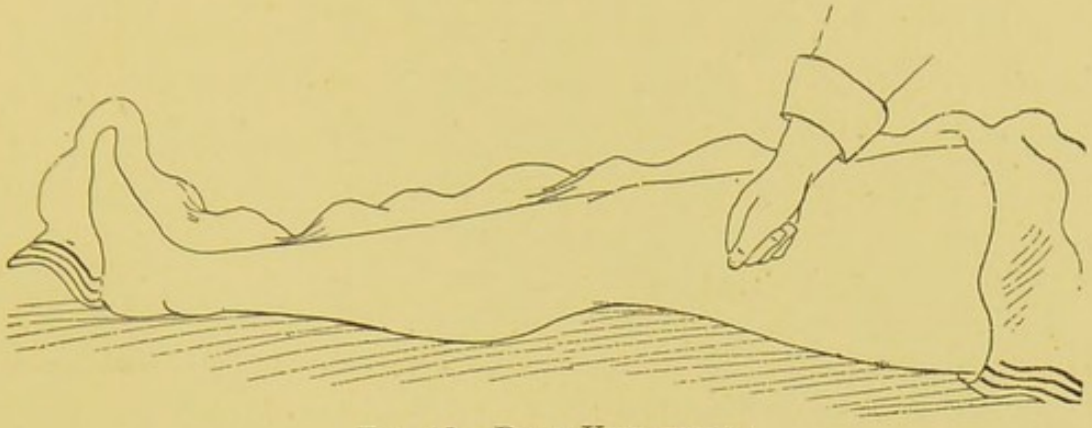

FIG. 16.—DEEP VIBRATIONS.

and is used for the exercise (Fig. 17) of the joints generally.

Extension is the return movement or unbending of the joints.

FIG. 17.—EXERCISING ANKLE.

Rotation is for the exercise of such joints as have rounded heads fitting into a socket (called ball and socket joints), as the humerus works in the glenoid cavity of the scapula, or where the head of the femur works in the hollow of the hip-bone (acetabulum). It is also for the exercise of pivot joints, such as the atlas vertebra rotating on the odontoid peg, or the radius on the ulnar.

Secousses (or shaking) may be described as sudden jerks. Say the hands are placed over the region of the heart, the fingers being extended, a short sharp jerk is given from the operator's shoulder. This movement is especially beneficial in cases of slow and weak circulation. It may also be applied to the thoracic organs by holding the patient's fingers and giving quickly executed shocks or shakings to the entire limb.

Tractions effect the circulation and consist of pulling or stretching such soft parts as may have become displaced or contracted. Useful in cases of sprains, also for the treatment of the sciatic nerve.

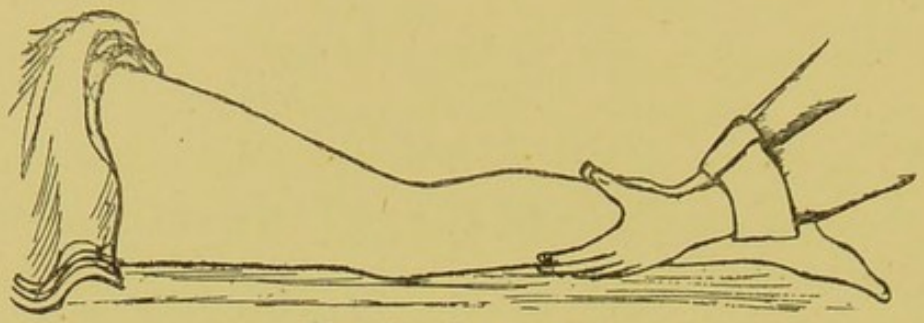

FIG. 18.—ROLLING UP.

Frolement (or rolling) signifies rolling the muscles from side to side between both hands with moderate pressure (Fig. 18), such, for instance, as starting from the ankle and rolling up the muscle (each hand alternately) till you reach the hip.

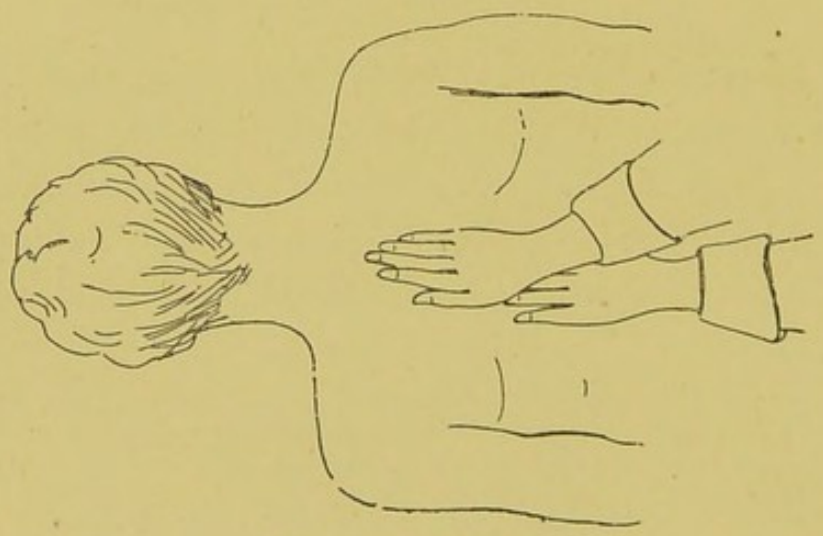

FIG. 19.—SWOOPING.

The tapôte (or flail) is a percussion movement particularly used for the back, thorax, and trunk. Partially curve the hand, and with the ulnar side and little finger flagellate the part, swinging your hand rapidly from the wrist. Used judiciously, it is very

beneficial for the relief of nervous headache by working over the area of the supra-orbital nerve.

Swooping is chiefly used for the spine. Extend and straighten the fingers of both hands and give a brisk downward friction with each hand alternately (as if chasing each other) (Fig. 19). Commence at the axis vertebra and follow the entire course of the spine.

"*The Spider*" is a peculiar movement of special value for the general massage of the small intestine and contraction of the uterus. Extend the fingers of both hands, placing them on the right-hand side of the abdomen, make a stroking movement alternately with each hand (Fig. 20) from the outer side of the

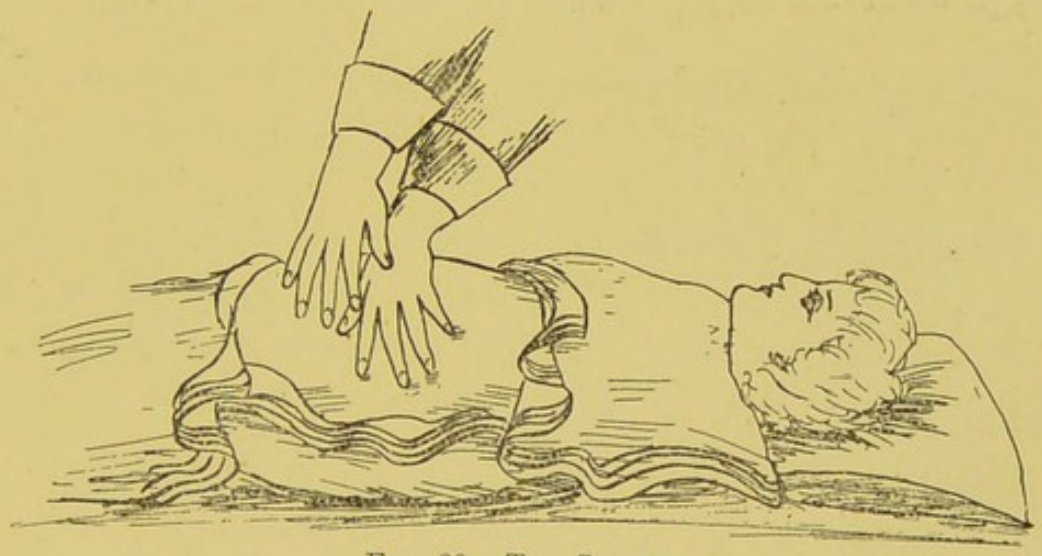

FIG. 20.—THE SPIDER.

abdomen working towards the umbilicus as a centre, thus making a complete circle of the abdomen. The direction of the movement resembles the spokes of a wheel; stroke well with the balls of the fingers.

Chapter VI.

THE BED.

Figure 21 shows my idea of the proper description of bed which should be found in every hospital and institution where massage is practised. It is simplicity itself; just plain deal trestles two feet four inches high and a thick plank two feet wide, six feet long, with strong grooves to fit into the trestles to

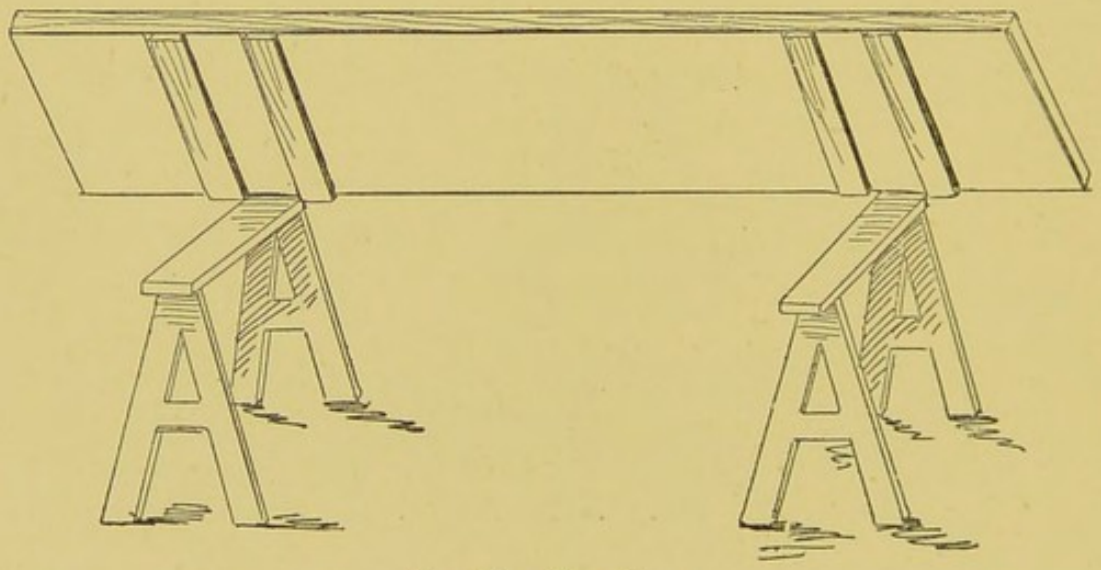

Fig. 21.—The Bed.

make it thoroughly secure, and either a straw or alva mattress. The advantage of such a bed cannot be too highly estimated. In the first place I consider—the masseuse! As it is *her* strength which has to be expended for the benefit and recovery of the patient, and as a rule the massing of *one* patient does not constitute her work for the day by a long way; she

often has several to masse and nurse into the bargain. Therefore, I say, think of her convenience first, and that will enable her to perform her work with comfort to herself and the greatest advantage to the patient. It is absolutely necessary in massing to stand *level* with your work, and not below, nor stoop to it, as would be the case when the patient is massed on a sofa or sitting in a chair, as I am assured is often done.

My system of massing (from which I have no intention of deviating) is this. The bed the height mentioned, a blanket spread open upon it, and the patient (divested of all clothing) placed in the centre of the blanket, the edges of which are to be brought up over the entire body, quite overlapping, by which means the operator can and does cover the patient entirely, uncovering each limb or part as required and then re-covering. A second blanket can also be folded on the top should the temperature make it desirable. By this means the whole body is massed with perfect ease and *without the least exposure*, a fact which cannot be too widely known (Fig. 22), as

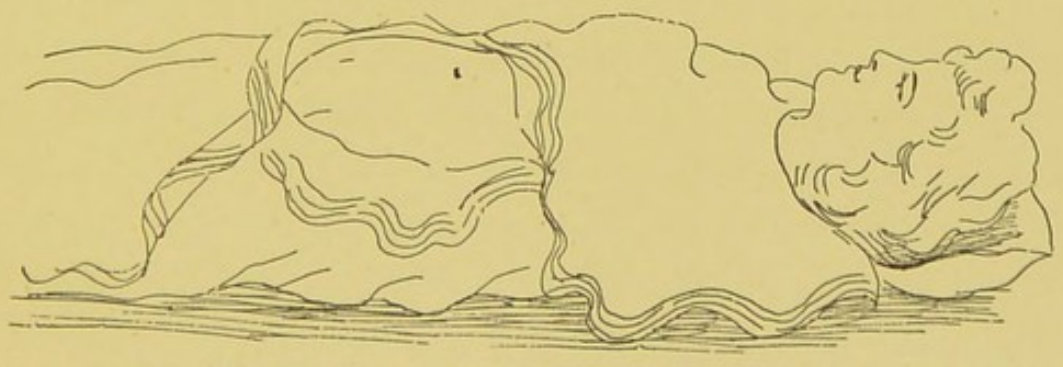

FIG. 22.—POSITION FOR MASSAGE OF ABDOMEN.

doubtless there are many to whom massage would simply mean new life, who are deterred from seeking its benefits by the fear of, and an overpowering objection to, exposure.

Chapter VII.

THE STRUCTURE OF MUSCLES.

Muscular tissue is the flesh which covers the bony framework of the body and forms a larger portion of the body than any other system of organs. Muscles are the chief contributors to heat and may be regarded as the furnaces of the body. As muscular contraction is attended by an increased consumption of oxygen and elimination of carbonic acid, it must be very evident to the intelligent masseur that by every well-regulated exercise and manipulation he is assisting in building up the tissues and restoring to active life and power those tissues which are degenerated or dying.

The function of muscle is to cause movement in the body. Every part of the body capable of motion performs its movements by means of its own special set of muscles. The largest and strongest must necessarily be sought for in the arms and legs.

The more work they are called on to do, the larger and stronger do they develop, and *vice versâ*. Muscular fibre is of two kinds: *striped* (or voluntary muscles) and *unstriped* (or involuntary muscles). The former act under the influence of the will and constitute the bulk of the fleshy parts of the body, and, together with the fatty tissue underlying the skin, give it its symmetry.

The involuntary, or smooth muscles, are those which carry on their work without the interference of the will. Among these are the muscles of the stomach, intestines, gall bladder, the lungs, heart, and the iris of the eye. The involuntary muscles found in the walls of the arteries, the heart, stomach, gall bladder, etc., are sometimes known as organic muscles. When they contract they force along the contents of these organs and vessels. In this way the blood is forced out of the heart, the food from the stomach, the bile fluid from the gall bladder, and so on. The organs of circulation, respiration, and digestion continue their work at all times because the will has no power over them. The especial property of muscle is its power to contract, the natural stimulus being sent from the nervous centres, the nerve being the medium of conduction. It will therefore be seen that muscular power is dependent on the vitality of the nervous centre and its connecting nerves, and that "pain, spasm, and cramp in muscles are due to over-excitability on the part of the nerve cell, or to defective resistance on the part of the nerve or muscle producing undue tension and pressure in the muscular fibres". Muscles are composed of bundles of distinct fibres which possess in life the remarkable property of contractility, or shortening themselves when subjected to stimuli of various kinds. These fibres, arranged parallel to one another, form a small bundle, and it is by aggregation of such bundles, held together by a delicate non-contractile tissue named *areolar tissue*, that the definite masses are produced, which, under distinct names, are spoken of as muscles. There are about 400 such muscles in the body distributed in pairs

equally and symmetrically on either side of the body. In size and form they present great variety. The smallest are found in the eyeball and drum of the ear. The largest, those of the thigh (called vasti muscles), weigh several pounds.

They are attached to the bone in various ways, some by one end to the bone and by the other end to the skin or some soft part or organ. By far the larger number are attached by both ends to the skeleton, passing from one bone to another. The attachment of a muscle which is nearer to the centre of the body, usually the more fixed attachment, is called the *origin*, whilst the more distant, which is usually the more movable attachment, is named the *insertion*. On the trunk most of the muscles pass over more than one joint; in the limbs too, although a few pass over one joint only, the greater number extend over two or more joints.

Muscles are sometimes fixed to the bones by delicate slips of fibrous tissue which are firmly connected to the periosteal covering, but more frequently they are less directly attached by strong white flexible but inelastic cords called tendons.

The muscular fibres usually either spring from or are inserted into the sides or surfaces of these tendons, which are themselves attached to the bones. By this arrangement a combination of strength with economy of muscular fibre is effected and lightness and elegance of form secured.

We next find in certain situations a strong fibrous investment which surrounds and supports the muscles of an entire limb and binds down their tendons securely, especially those which have a tendency to be displaced during movement. This investment is

termed the *fascia*. It supports the superficial blood-vessels, the superficial absorbent vessels and nerves. It is thickest round the joints. At the wrist and ankle it is further strengthened by circular bands called *annular ligaments*, which secure the tendons in their appropriate grooves and prevent their starting away from the bone when the muscles are in action. The tendons of the flexor muscles of the fingers and toes have special strong sheaths for this purpose quite independent of the fascia.

Every muscle has a name—many of them several names—derived either from their most evident action, as the *flexor* of the wrist (bends the wrist), *extensor* of the wrist (straightens it); or from their form, as the *triangular* muscles of the mouth; or from their construction, as the *biceps* muscle of the arm; or from their situation, as the *anterior* tibial; or from their direction, as the *straight* or rectus muscle of the thigh; or from their origin and insertion, as the *sterno-mastoid;* or from some other circumstance, as the *sartorius* or *tailor's* muscle, because it assists in crossing one leg over the other. I do not consider it desirable to occupy space by describing the points of attachment of the muscles to the skeleton, but in many instances these are sufficiently evident, especially if the following list of muscles be studied with the aid of a good diagram of the muscular system, such, for instance, as the admirable movable atlas of the Human Body by Professor Witkowski, M.D. (published by Baillière Tindall and Cox, 20 King William Street, Strand), or the Physiological Diagrams by John Marshall, F.R.C.S. (published by Alfred Tarrant, 11 Searle Street, Lincoln's Inn Fields).

Muscles of the Head and Face.

Occipito-frontal muscle, united by a broad tendon over the top of the cranium (Fig. 23); moves the scalp, and wrinkles the forehead horizontally.

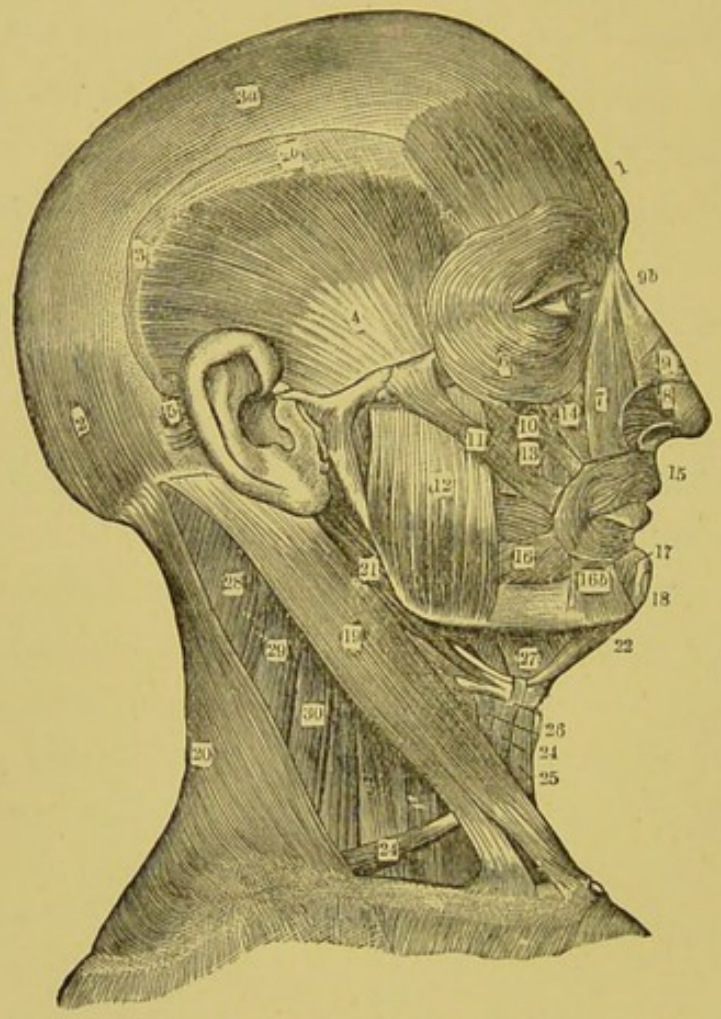

Fig. 23.—Muscles and Aponeuroses of the Neck, Head, and Face.—1, frontal. 2, occipital. 3*a*, aponeurosis of the occipital frontalis. 3, temporal fascia. 4, temporal. 5, retraheus aurem. 6, orbicularis palpebrarum. 7, levator labii superioris et alæ nasi. 8, lavator naris anterior and posterior. 9, compressor naris. 9*b*, pyramidalis nasi. 10, zygomaticus minor. 11, zygomaticus major. 12, masseter. 13, caninus. 14, levator labii superioris. 15, orbicularis oris. 16, buccinator. 16*b*, depressor anguli oris or triangularis oris. 17, depressor labii inferioris or quadratus menti. 19, sterno-cleido-mastoid. 20, trapezius. 21, digastric and stylo-hyoid. 22, anterior belly of the digastric. 24, omo-hyoid. 25, sterno-hyoid. 26, thyro-hyoid. 27, mylo-hyoid. 28, 29, 30, splenius.

Temporal muscle; closes the teeth, as in chewing.

Orbicular of the eyelids (Fig. 24); closes the eyelids.

Compressor of the nose; acts on the cartilages of the nose.

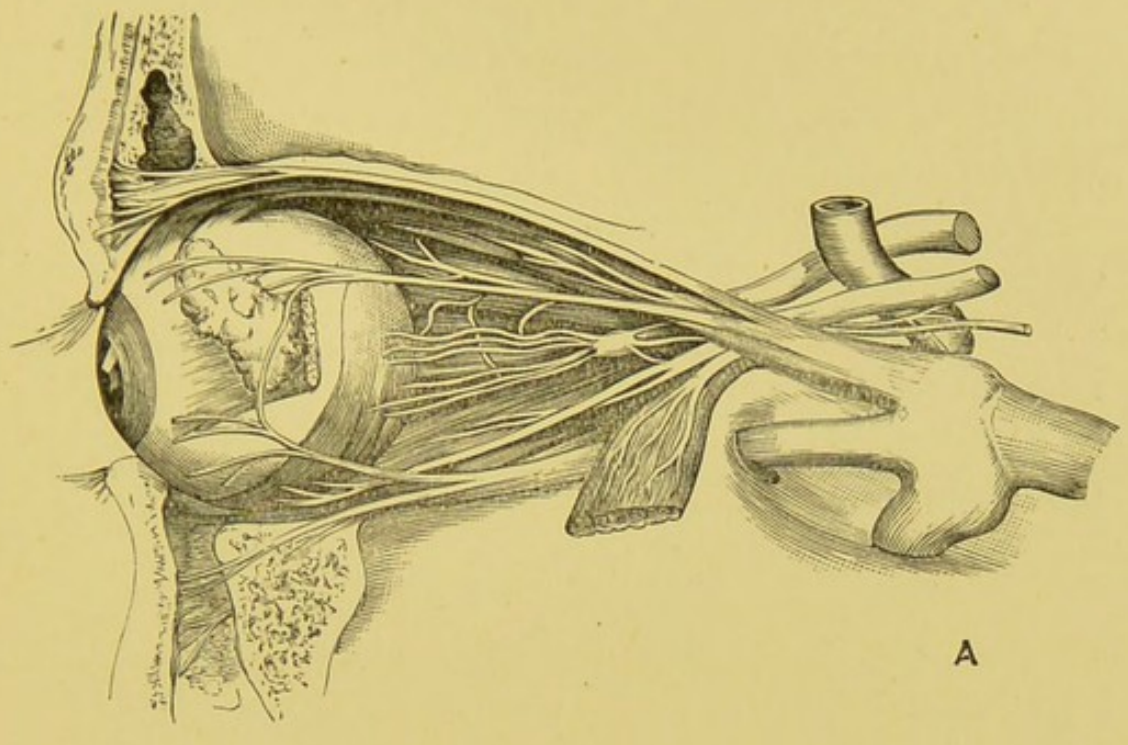

FIG. 24.—SECTION THROUGH THE ORBIT SHOWING MUSCLES AND NERVES OF THE EYE.

Levators of the nose and upper lip; raise the lip and side of the nose.

Zygomatics; used in laughing, to extend the corners of the mouth.

Orbicular of the mouth; closes the mouth.

Square muscle of the chin; depresses the lower lip.

Triangular or depressor of the corner of the mouth; draws down the corner of the mouth.

Buccinator, or cheek-muscle; keeps the food between the teeth; compresses the air in blowing a trumpet.

Masseter; closes the teeth in mastication.

MUSCLES IN THE NECK.

Digastric; opens the teeth by lowering the under jaw.

Sterno-hyoid; draws down and fixes the hyoid bone, or bone which supports the tongue.

Omo-hyoid; has a similar action, especially in sucking.

Sterno-mastoid; turns the head and face to the opposite side.

Part of the *trapezius;* has many actions on the head and shoulders.

Splenius; helps to support the head from falling forwards.

Muscles on the Trunk.

Great pectorals; move the arm-bones forwards and downwards.

Deltoids; raise the arm-bones.

Latissimus dorsi, or broadest muscle of the back; draws the arm-bone backwards and downwards, and rotates it inwards.

Great serratus muscle of the scapula; draws the shoulder-bone forwards.

Muscles on the Upper Limb.

Biceps; flexes the forearm on the arm, and being inserted into the radius only, rolls that bone outwards on the ulna, and so helps to supinate the hand (Figs. 25 and 26).

Anterior brachial; bends the forearm on the arm, being inserted into the ulna only.

Coraco-brachial; draws the arm to the side.

Triceps; extends the forearm on the arm.

Long supinator; turns the palm of hand and the wrist face upwards or supine.

Radial extensor of the wrist; extends the wrist on forearm.

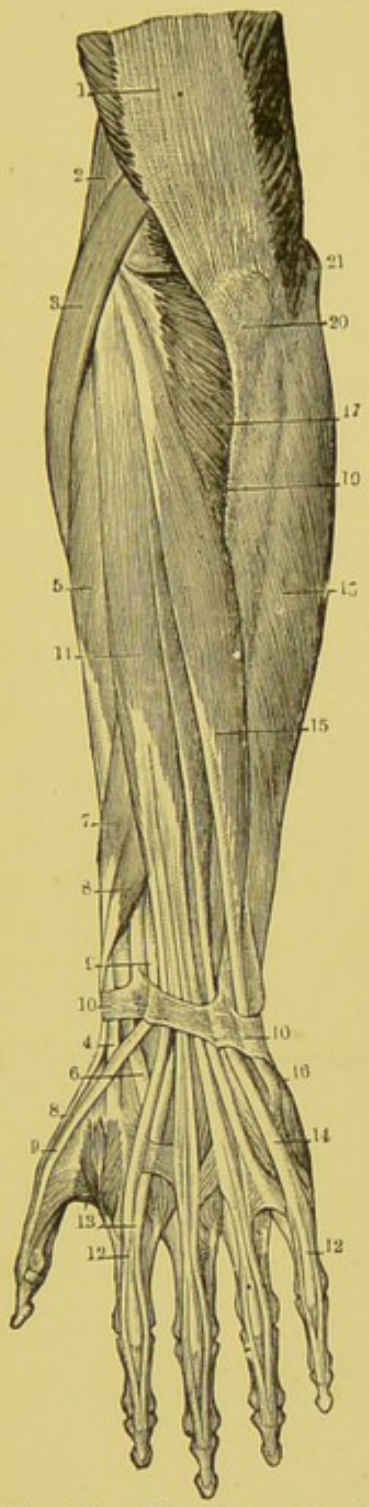

FIG. 25.—THE POSTERIOR MUSCLES OF THE LEFT FOREARM.—1, the tendon of triceps brachialis. 2, supinator longus. 3, 4, extensor carpi radialis longior. 5-6, extensor carpi radialis brevior. 7, 8, abductor longus pollicis and extensor brevis pollicis. 9, 9, the extensor longus pollicis. 10, 10, the angular ligament of the wrist, dorsal aspect. 11, 12, the extensor communis digitorum and its tendons. 13, the tendon of the extensor indicis. 14, the tendon of the extensor minimi digiti. 15, 16, extensor carpi ulnaris. 17, anconeus. 18, the flexor carpi ulnaris. 19, the posterior border of the ulna. 20, olecranon. 21, the inner condyle.

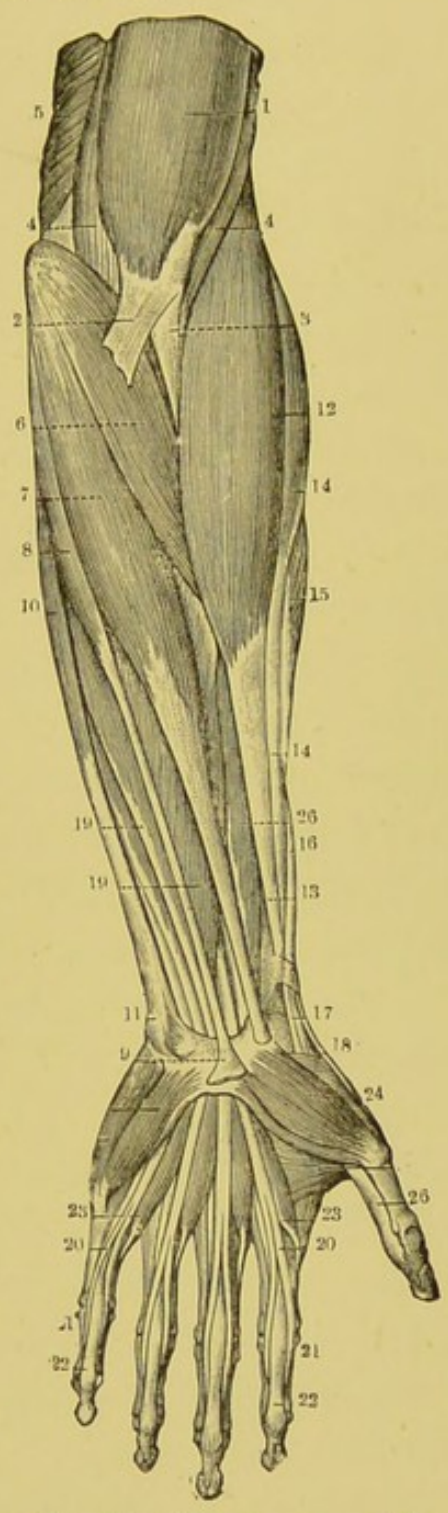

FIG. 26.—THE ANTERIOR MUSCLES OF THE LEFT FOREARM.—1, the biceps brachialis. 2, its aponeurotic expansion. 3, its tendon. 4, 4, brachialis anticus. 5, the internal head of the triceps. 6, pronator rad ii teres. 7, flexor carpi radialis. 8, 9, palmaris longus. 10, flexor carpi ulnaris. 11, its attachment to the pisiform bone. 12-13, supinator longus. 14, 15, the extensor carpi radialis, longior, and brevior. 16, the abductor longus pollicis. 17, its tendon. 18, tendon of extensor longus pollicis. 19, 20, 21, the superficial flexor of the fingers and its tendons. 22, tendons of the deep flexors. 23, 23, the lumbricales. 24, abductor brevis pollicis. 26, flexor longus pollicis.

Common extensor of the fingers; extends or straightens the fingers.

Three extensors of the thumb; extend the three bones of the thumb.

Extensor of the little finger; straightens that finger.

Ulnar extensor of the wrist; extends the wrist on the forearm.

Abductor of the forefinger; draws that finger from the middle finger.

Adductor of the thumb; draws the thumb to the palm of the hand.

Interosseous muscles of the back of the hand; draw the fingers aside.

Pronator of the radius; helps to turn the palm of the hand face downwards, or prone.

Radial flexor of the wrist; helps to bend the wrist on the forearm.

Long palmar muscle; tightens the palmar fascia.

Superficial flexor of the fingers; bends the second bones of the fingers.

Ulnar flexor of the wrist; helps to bend the wrist on the forearm.

Short palmar muscle; raises the skin on the inner border of the palm.

Short muscles of the thumb; draw the thumb in different directions.

Lumbricales muscles of the palm of the hand; assist the flexors of the fingers.

Muscles on the Trunk.

External oblique muscles of the abdomen; help to support the viscera and act on the thorax so as to bend or turn the trunk.

(*Linea alba*, or white line of the broad tendons of

the abdominal muscles; these tendons support the contents of the abdomen in front.)

Tendinous arch, called *Poupart's ligament*, strengthens the lower part of the walls of the abdomen.

Great gluteus muscle; erects the pelvis on the femur.

Middle gluteus muscle; has a similar action.

Muscles on the Lower Limb.

Tensor muscles of the fascia of the thigh; tighten that fascia and act on the knee joint.

Rectus, or straight muscle of the thigh; extends the leg on the thigh.

External vastus muscle; has a similar action.

Internal vastus muscle; has a similar action.

(The rectus and two vasti muscles erect the thigh-bone on the tibia. They also extend the leg on the thigh, acting on the tibia through the patella and ligamentum patellæ.

Sartorius or tailor's muscle; draws one leg over the other and bends it.

Adductor muscles of the thigh; draw the thigh inwards, also steady the pelvis on the thigh-bone.

Semi-membranosus muscle; helps to bend the leg on the thigh.

Biceps flexor muscle of the leg; helps to bend or flex the leg.

Gastrocnemius muscle; keeps the leg erect on the ankle (Fig. 27), extends the foot, also raises the heel in walking.

Soleus muscle; assists the gastrocnemius, both of them act upon the os calcis through the tendon of Achilles.

Peroneal muscles; steady the leg on the ankle, also turn the foot outwards.

Anterior tibial muscle; raises the foot.

Common extensor of the toes (Fig. 28); raises the

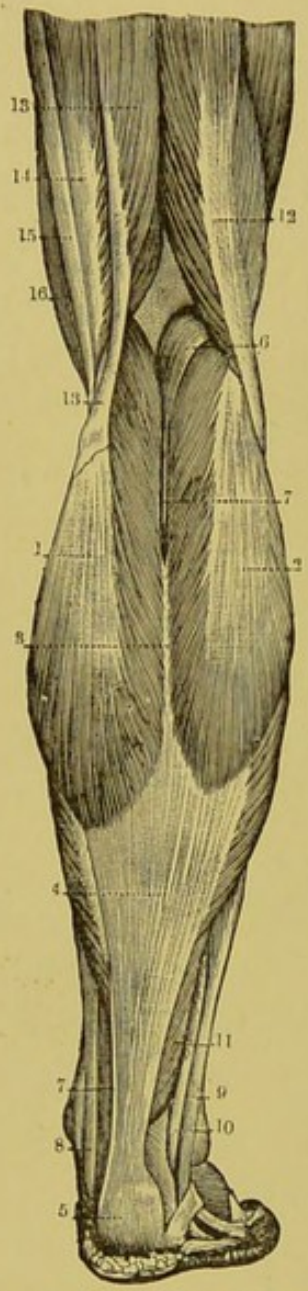

FIG. 27.—THE POPLITEAL REGION AND POSTERIOR SURFACE OF THE RIGHT LEG.—1, the internal gastrocnemius. 2, external gastrocnemius. 3, space between gastrocnemii. 4, 5, tendon Achilles. 6, 7, 7, plantaris muscle and its tendon. 8, tendons of deep muscles (common flexor and posterior tibial). 9, peroneus longus. 10, peroneus brevis. 11, soleus. 12, biceps femoris. 13, semi-tendinosus. 14, semi-membranosus. 15, gracilis. 16, sartorius.

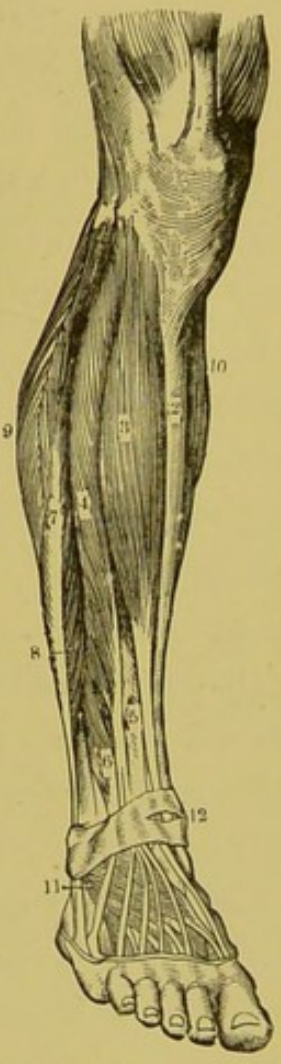

FIG. 28.—MUSCLES OF THE ANTERIOR REGION OF THE LEG.—1, tendon of the rectus femoris. 2, tibii. 3, the anterior tibial muscle. 4, the common extensor of the toes. 5, the proper extensor of the great toe. 6, the peroneus tertius. 7, 8, the peroneus longus and brevis. 9, the external head of the gastrocnemius. 10, the internal head of the gastrocnemius. 11, extensor brevis digitorum. 12, the superior annular ligament of the dorsum of the foot.

foot, but especially extends or pulls up the four outer toes.

Posterior tibial; stretches the foot and turns it in.

Short extensor of the toes; helps to raise the four inner toes.

Abductor of the little toe; draws that toe from the others (Fig. 29).

Abductor of the great toe; draws that toe from the others.

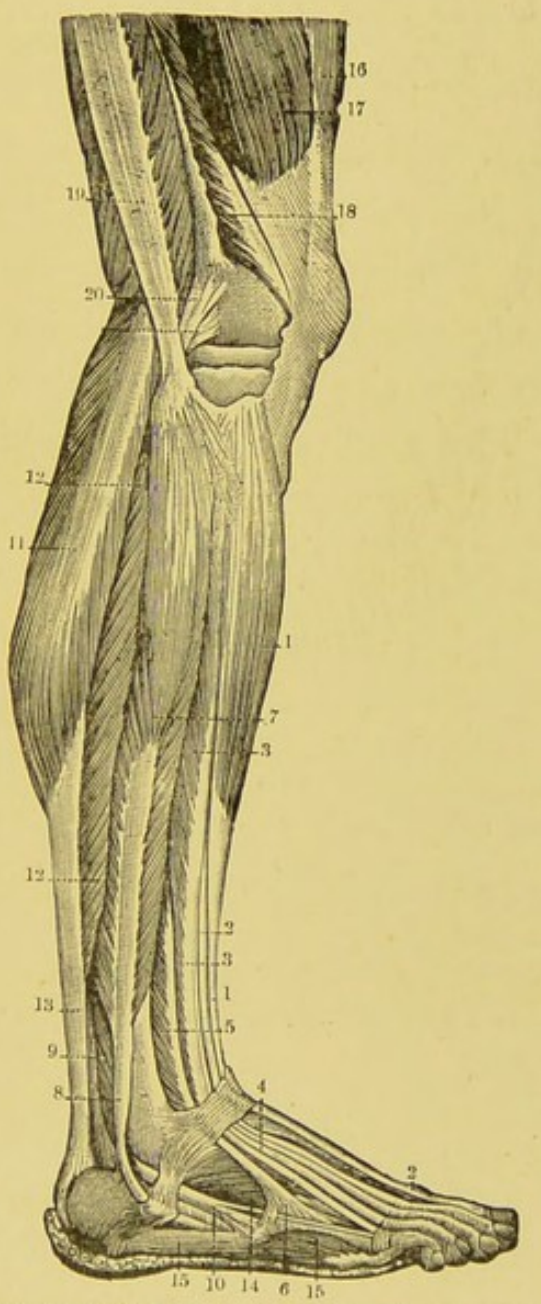

FIG. 29.—MUSCLES OF THE LEG (external surface).—1, 1, the anterior tibial muscle. 2, 2, the tendon of the extensor proprius pollicis. 3, 3, the extensor longus digitorum with its tendons (4, 5, and 6). 7, the peroneus longus and its tendon (8). 9, peroneus brevis and its tendon (10). 11, the external head of the gastrocnemius. 12, 12, the soleus. 13, tendon Achilles. 14, extensor brevis digitorum. 15, abductor minimi digiti. 16, the rectus femoris. 17, 18, vastus externus. tendon of the biceps femoris. 20, external lateral ligament of the knee.

Chapter VIII.

STRUCTURE AND MASSAGE OF THE LEG AND FOOT.

The lower limb, as we have already seen, consists of the femur, the knee-pan or patella, the tibia or shin-bone, the fibula or splint bone, seven tarsal bones, five metatarsal bones, fourteen phalanges of the toes (two for the great toe, three to each of the others). The muscles of this region have been enumerated in a former chapter.

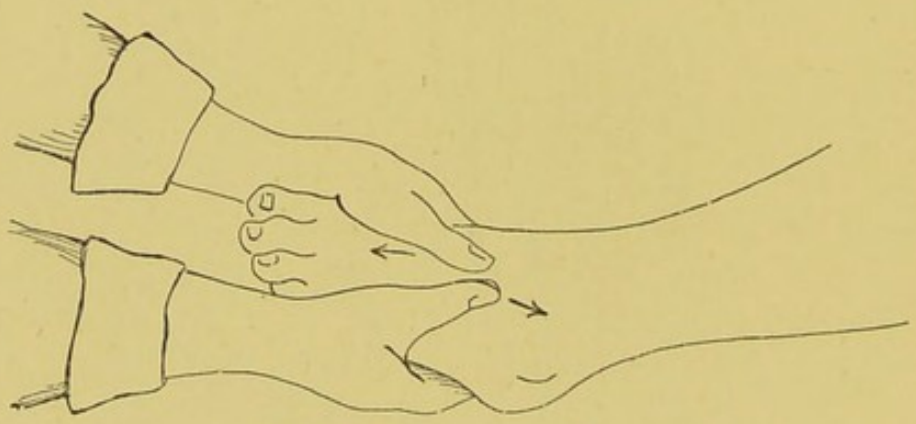

Fig. 30.—Friction of Foot.

We shall now see of what the hygienic massage of this limb consists. I shall endeavour to be as simple and practical as possible in my explanations.

The patient, lying on her back, enveloped in the blanket, we now uncover from the knee to the foot, which is taken firmly in both hands, keeping the fingers straight underneath and the thigh of the thumb, meeting on the instep (Fig. 30), you work

rapidly with firm even pressure, which should be equal with finger and thumb. You next place your thumb on the instep, and work with your three fingers round the ankle, making them fit in, as it were (it is useless gliding).

You now come to the side of the bed, and taking the foot in the left hand, with the right you rub each toe separately, working well to the first joint with the thumb, then with the thumb and fingers to the extreme tips. For the present the foot is left and the leg manipulated from the ankle to the knee.

In Fig. 31 you see the hands gliding up to about

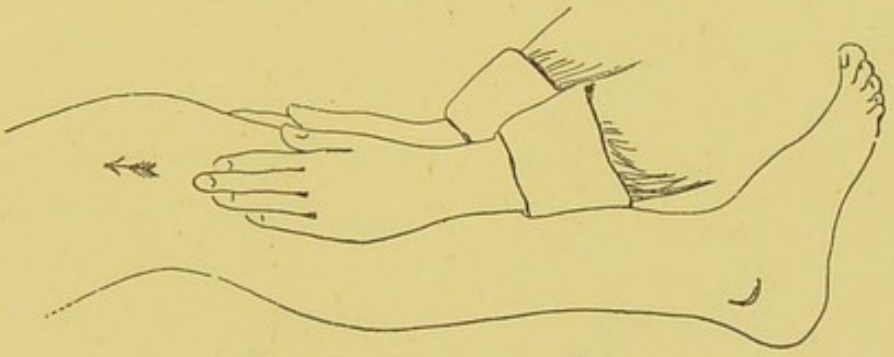

Fig. 31.—Friction of Leg.

four inches above the knee, when you turn them under the limb and come down quickly and firmly, having the muscle well in your hands as shown in Fig. 32. It is absolutely necessary that the hands

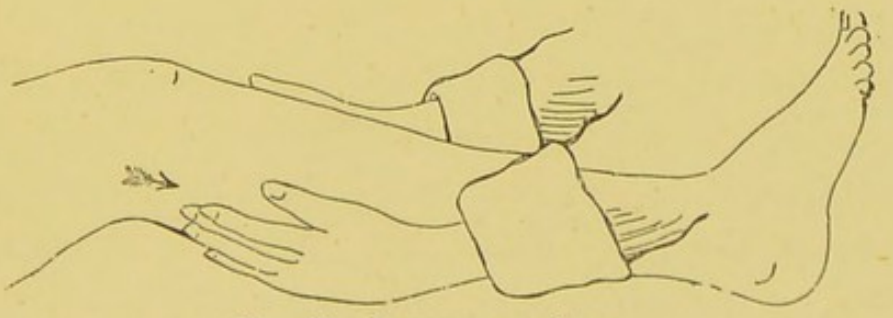

Fig. 32.—Friction of Calf.

should be held exactly in that position to avoid dragging the skin, which is always most painful and

objectionable to the patient. After repeating this movement several times, you proceed to knead the calf. This many find difficult to do without hurting, but the failing has to be conquered by the teacher; and, beyond all doubt, those who bruise, or hurt their patients in *any way*, have either been improperly taught, or not taught at all, but have simply been reading books on massage, and fancy they know how to use their hands to proper advantage, which is utterly impossible without *practical* demonstration. But to return to the movement in question. Beginning at the ankle, with the left hand press the muscle well forward, take it in your right hand, keeping your fingers perfectly straight and your elbow to your side; you then work with the *thigh* of the thumb, pressing down and rolling back the muscle evenly and firmly to the knee, you return to the ankle again and again, always working upwards. Presuming the leg is very emaciated, instead of kneading, as just described, the following method would be preferable. Knead with both hands, bringing the muscle well forward with the fingers towards the thumb, first with the right, then with the left hand, bearing in mind never to pinch.

Pinching is generally occasioned by pressing too *pointedly* with the thumb. For the present we have done with the foot and leg to the knee, which is now covered and the thigh uncovered to the groin. Standing well up to your work, you commence there. Steadying the limb with the left hand, you open the finger and thumb of the right, and taking the muscle well between, you work from the knee to the groin with great rapidity, keeping the thumb well up, till you feel the part so treated glow in your hand. You

then steady the limb with your *right* hand and friction the outer side. This should be rubbed with the thumb close to the fingers; the movement can then be made without jerking the patient.

You then perform the various movements on the thigh—knead from knee to groin, taking a good firm hold of the muscle as shown in Fig. 10, you work first with one hand and then the other five or six times, always working upwards. It is most desirable that the masseuse should note this advice. Where the movements only require one hand to be used, take care always to steady the limb with the other, because, by so doing, you are enabled to take a much deeper and firmer hold of the muscle without the possibility of hurting.

In Fig. 15 we see pointed vibrations. The fingers should be kept straight so that you work with the ball of the fingers and thumb. Otherwise, if the fingers are *bent*, you would naturally make use of the extreme tips and your nails would hurt the patient at every movement. You work quickly and firmly all over the thigh several times, never raising your hand high; you now do "deep vibrations" by clenching the hand (as shown in Fig. 16). Work well all over the thigh several times.

Next comes "pétrissage," as shown in Fig. 11. Work upwards from the knee. Extend fingers and thumb to the utmost to enable you to take a good handful, which you grasp firmly, and bringing your fingers together, with the wrist well raised, you embrace and relax alternately (*never pinching*) until the entire limb has been manipulated. The next movement, "malaxation," strongly resembles pétrissage, although in its effect it is very different, being

more profoundly searching and stimulating, and in case of great lassitude or atrophy of the muscle, I consider it invaluable. The palm is pressed firmly on the limb, then bring the fingers together, but not to a point. Work thoroughly over the thigh. The next movement, to which every author seems to give a different name, such as "hacking," "hächure," "tapôtement," etc., etc., I, for simplicity's sake, call "chopsticks" (see Fig. 12).

The hands are worked quickly one after the other, care being taken as in all movements not to raise them too far from the limb, which would render a very beneficial movement a disagreeable one to the patient.

The next movement is termed "foulage" (see Fig. 13). Still standing in the same position, you place the left hand firmly to protect the skin at the groin, then with the fingers and thumb of the right hand well *extended* and perfectly straight, you commence to press quickly and firmly from groin to knee, feeling the muscle ride up between them. I always work from left to right in this particular movement, not that it makes any serious difference as long as it is thoroughly and well done.

We next come to "sciage" (see Fig. 14). This movement, if not *the* best, is certainly second *best.* Standing considerably below the knee, you cross hands, right over left, or *vice versâ.* You place the hands well under the thigh, and taking a good firm grip bring them up and round in a semicircle, rolling the muscle backward and forward in each movement, never letting the hands meet sufficiently close as to pinch in passing.

When this movement has been performed a few

times we come to "claquement," which, in plain English, is "spanking". This should be done over the entire limb, from groin to foot. Raising the foot with the left hand, you work with the right, that is, presuming you are standing on the right side of the patient, if on the left, naturally the position of the hands is reversed; one's own sense will point out the position necessary. That done, we next come to a movement which is so good that it should never be omitted. It comes under the heading of "effleurage" (my term for it is "rolling up"), see Fig. 18. It is performed thus. Stretching apart the thumb and forefinger of each hand and standing at the foot of the patient, you begin at the ankle, get the muscle well in your hands with fingers straight; you first with one hand, then the other, work evenly and firmly to the top, keeping the tips of the thumbs up so that the work is done entirely between the outstretched thumb and finger. This done, you smooth down the limb and cover it entirely with the exception of the foot, which must now be exercised in the following manner. (I may here remark that I have from the commencement been describing how I work on the *right* side of the patient.) I now hold the ankle firmly with the left hand, and with the right I clasp the foot (see Fig. 17) and work it first backward and forward and then round and back again several times till every muscle has been exercised; then the foot is taken in the left hand by the instep, and the toes are exercised with the right hand in this way: open the thumb and finger wide, which enables you by holding the hand in a slanting position with the wrist downwards to have control of all the lower joints at the same time. Work them well backward

and forward several times. Then cover the lower joints with the forefinger; hold firmly and exercise the next row in the same way, and afterwards the tips separately.

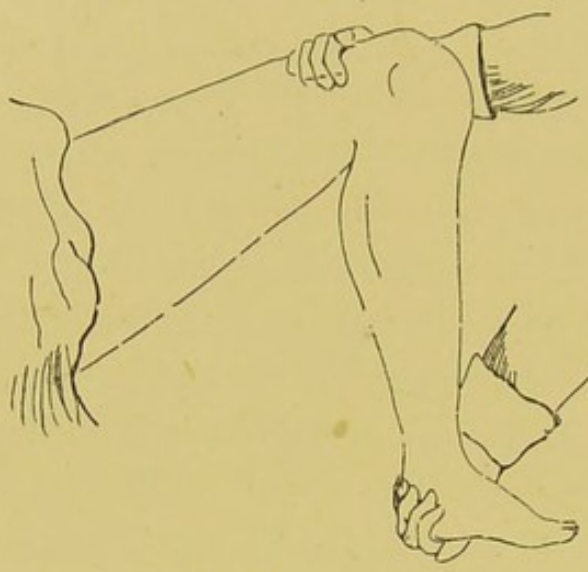

Fig. 33.—Exercising Knee.

We now uncover to the knee, and taking the heel in the right hand (Fig. 33) we bring the foot to the

Fig. 34.—Exercising Hip.

buttock, or at least as far as it can be taken without

hurting; then placing the leg flat on the bed and the left hand pressing just below the knee, you take the heel in the palm of the right hand and raise it sufficiently to feel you exert the muscle and stretch the sciatic nerve. This movement repeated three or four times, we then exercise the hip. The knee being raised, you clasp it with both hands (Fig. 34), taking it well up, with good firm pressure bear to the left, bring it round and up again, making a rotary movement eight or ten times.

When sciatica has to be treated this will be found a valuable movement, as the attack contracts the sciatic nerve and this movement relaxes it. We now cover the leg and uncover the arm.

Chapter IX.

STRUCTURE AND MASSAGE OF THE ARM, SHOULDER AND HAND.

The upper limb consists of the *humerus* or arm-bone, the *radius*, the *ulna*, eight *carpal* (or wrist) bones, five *metacarpal* bones, fourteen *phalanges* of the fingers. The muscles of the region have already been mentioned.

We will now proceed to manipulate and exercise the limb.

Taking the hand (as shown in Fig. 35) with the

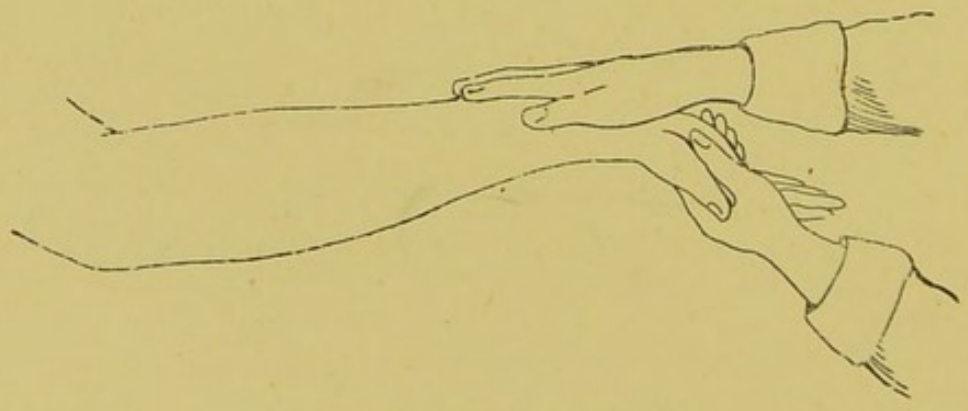

Fig. 35.—Friction of Forearm.

right hand, you rub with great rapidity and pressure to the elbow joint for several seconds. Then separate the fingers, and with the tips give deep pressions from hand to elbow. I then hold the wrist with the left

hand, and moving higher up, masse the biceps and the rest of the arm, rolling and rubbing alternately. I next take the hand firmly in my own, palm downwards, and rub it as the foot is done in Fig. 30.

We then proceed to exercise the shoulder, the biceps, elbow, wrist and hand (Fig. 36). Making a cup of the palm of each hand, and standing close up to the patient, place the left hand on the shoulder and take the elbow in the right palm; now press the humerus upwards, then take the elbow well out from the side, you (with the left hand) bring down the shoulder, simultaneously bringing the elbow close to the side with the right hand. This movement

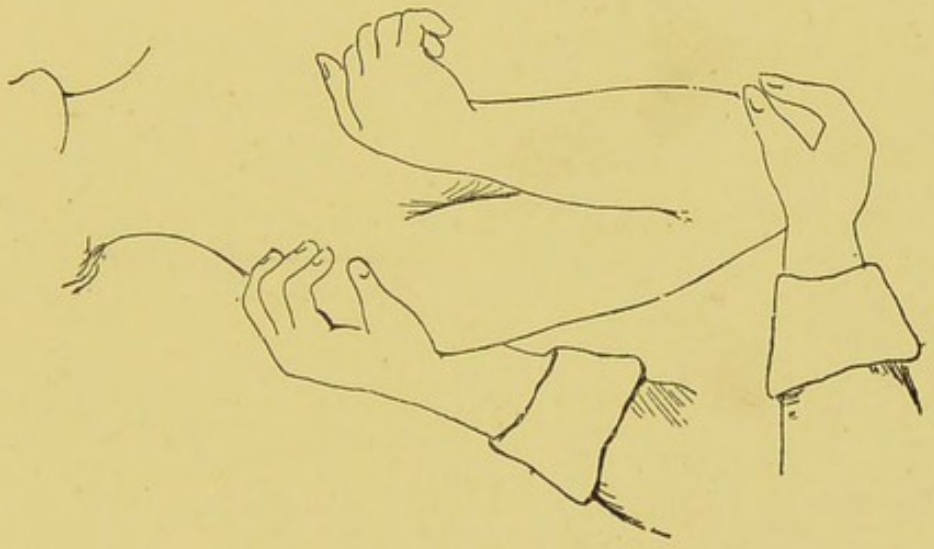

Fig. 36.—Exercising Shoulder.

rotates the rounded head of the humerus in the glenoid cavity of the scapula.

This being repeated several times, the arm is placed flat on the bed, in a longitudinal position, the left hand is placed on the biceps, and telling the patient to resist, you with the right hand bring up the forearm to the extreme, and when taking it back again, give pressure on the biceps. Repeat several times.

We next take the wrist and hand (Fig. 37). Holding both firmly you flex and extend the wrist joint, then move it round and back again repeatedly, taking care not to grip too severely with the left hand, or you run the risk of stopping the circulation. Let the flexions, extensions, and circumductions be evenly and firmly done, just enough to be felt, but above all not in a loose and jerky manner.

Next the phalanges of the fingers are taken between the thumb and fingers; the four lower joints may all be flexed and extended at the same time.

Fig. 37.—Exercising Wrist and Hand.

When that is done cover those joints with the left hand (that they may not move again), then flex and extend the next row; finally, take the top joint (*ungual phalanx*) between the thumb and forefinger and exercise each separately, securing the second joints with the left hand. I always consider it

unnecessary waste of time to exercise each joint separately, with the exception of the tips of toes and fingers and the thumb. The thumb must be exercised separately, the lower joint (metacarpal bone) has great freedom of movement on the trapezium bone of the carpus. We now do "claquement" all over the limb and "roll up" from wrist to shoulder (as shown in Fig. 18. All the limbs having been treated as described, we will now turn our attention to the throat, chest and heart.

Chapter X.

THE THROAT, CHEST AND HEART.

The bony framework of the thorax, or chest, forms a conical cage, narrow and open above, wide and open below. This cage consists of twenty-four ribs or costæ, twelve on each side, which are at the back attached to the dorsal vertebræ, and the seven upper ribs attached in front to the sternum or breast-bone. The lower ribs are unattached in front and are termed false ribs. The spaces between the ribs are filled up by thin muscles called the *intercostal* muscles and are also covered with broad muscles. The floor of the chest, which separates it from the abdomen, is a thin partition, partly muscular and partly tendinous, called the *diaphragm*. The organs of the region are very important. In the neck we have the *larynx*, or organ of voice (Fig. 38), placed below the root of the tongue upon the upper end of the windpipe; the *trachea*, or windpipe, the air-passage leading down into the chest to reach the lungs; the *pharynx* and the *œsophagus*, or gullet, down which the food is swallowed. The three constrictor muscles of the pharynx contract upon a morsel of food as soon as it is received by the pharynx and convey it gradually downwards into the œsophagus.

The thorax, or chest, contains the lungs (the great organs of respiration), the heart (great organ of

circulation). The left lung is smaller than the right, and is divided into two lobes; the right lung has three. The lungs are lodged in two distinct compartments of the chest formed by two membranous sacs called the *pleuræ*. Each membrane, or pleura, thin and transparent, but tough and elastic, forms a

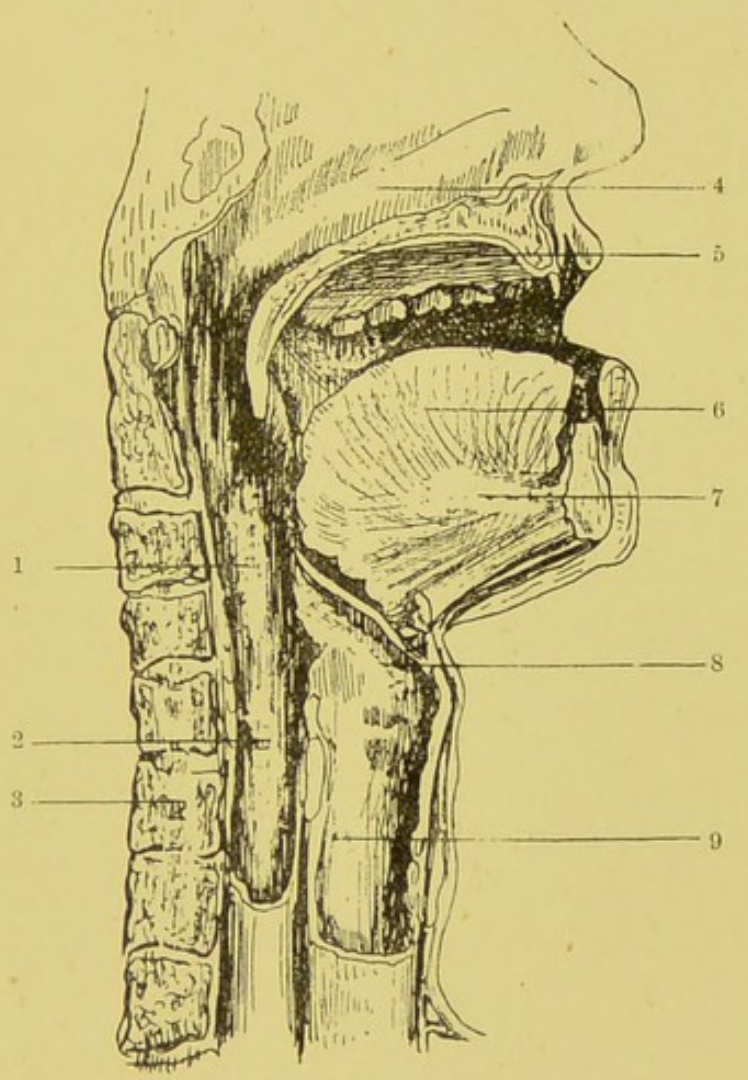

FIG. 38.—SECTION OF FACE AND THROAT.—1, pharynx. 2, gullet. 3, vertebræ of neck. 4, nasal passages. 5, soft palate. 6, tongue. 7, salivary glands. 8, epiglottis. 9, windpipe.

smooth lining to its own partition of the chest, forming a completely closed sac. A third closed sac named the *pericardium* surrounds the heart.

The lungs are made up entirely of closely interwoven air-passages and blood-vessels. Their function is to purify the blood by taking from it the poisonous

substances it has collected in its course through the body and also to supply it with oxygen. After entering the thorax the trachea divides into two branches (one of which goes to each lung) called bronchi (Fig. 39).

The heart is a thick involuntary muscle about the size of a shut fist and contains four chambers,

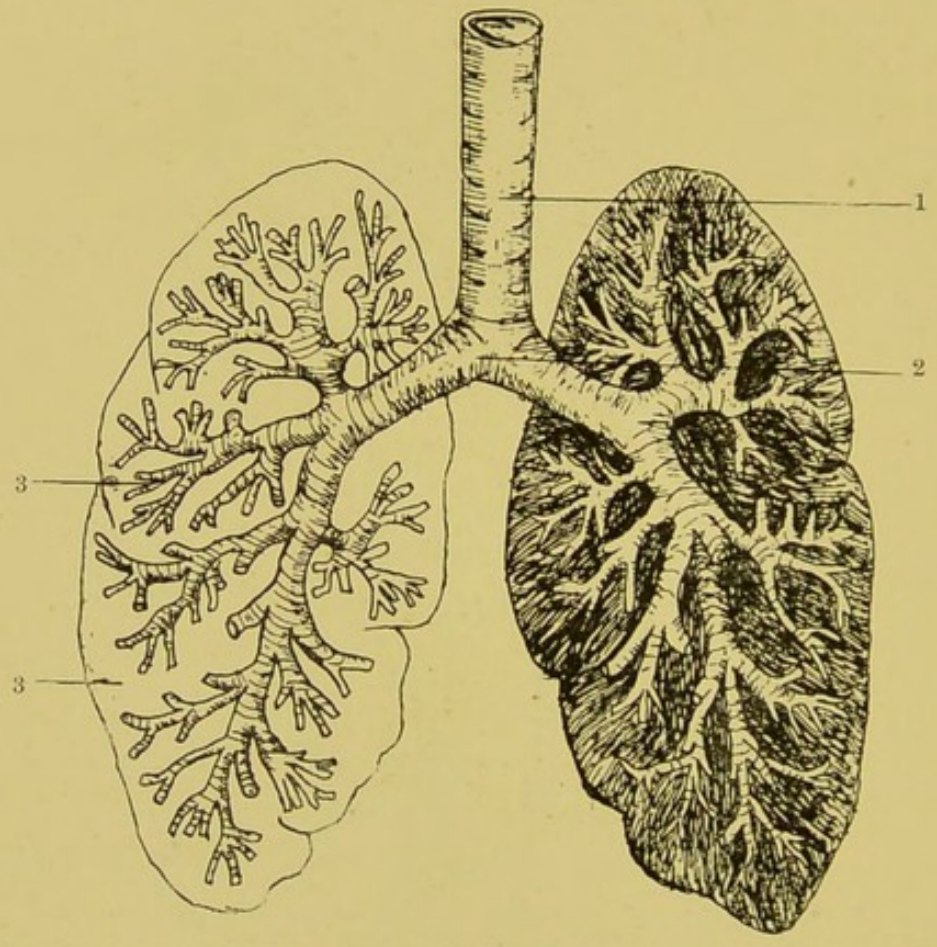

FIG. 39.—SECTION OF LUNGS.—1, windpipe. 2, bronchi. 3, 3, bronchial tubes.

two auricles, two ventricles. The principal blood-vessels connected with it are the aorta and the pulmonary artery leading *from* the heart, and the venæ cavæ and the pulmonary veins leading *to* the heart. The right half of the heart contains impure venous blood (Fig. 40), and the left half pure arterial blood. The pulmonary artery, after leaving the heart, splits up into two pipes, one going to each lung to carry to

them the dark impure blood which has been brought in by the great veins that the lungs may purify and send out again heavily charged with life-giving oxygen.

The contractions or beats of the heart vary in rapidity according to age and other causes. In childhood there are from 100 to 140 per minute. In the prime of life from sixty to seventy-five. In old

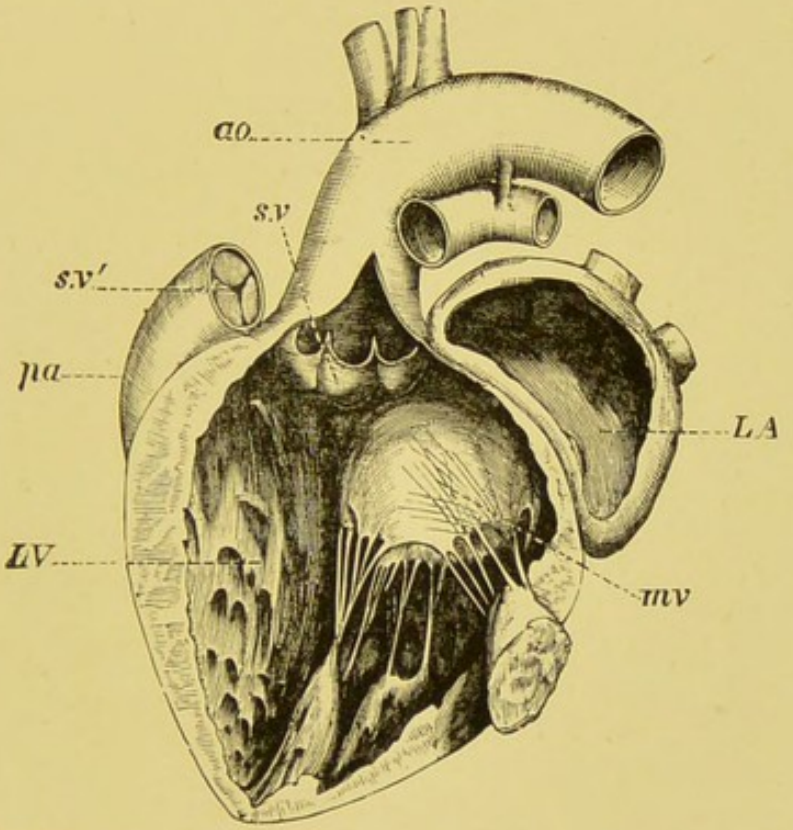

Fig. 40.—Dissection of Left Side of Heart of Man, showing Valves.—*L.V.*, left ventricle. *L.A.*, left auricle. *m.v.*, mitral valve. *p.a.*, pulmonary artery. *s.v.*, semi-lunar valves of do. *ao.*, aorta. *s.v'.*, semi-lunar valves of do.

age still slower. In fevers perhaps 200 per minute. Every time the ventricles contract, the apex of the heart is drawn upwards and forwards and strikes upon the front walls of the thorax.

This swelling and contracting may be felt on the arteries of the wrist, ankle, neck, and the temples, and is called the pulse.

The *capillaries* are the minute hair-like tubes

which form the connection between the end of the finest arteries and the commencement of the finest veins, and are only visible by the aid of a microscope.

The circulation of the blood is generally treated under four heads :—

I. The greater circulation, or the circulation through the body.

II. The lesser or pulmonary circulation, the course of the blood through the lungs.

III. The portal circulation, which is simply a branch of the greater circulation and carries blood through the stomach, spleen, pancreas, and liver.

IV. The coronary circulation, or course of the blood through the muscles of the heart itself.

The walls of the capillaries consist of an exceedingly delicate membrane which allows the liquor sanguinis of the blood to pass through into the tissues beyond, which are in this way nourished, and strengthened, and restored. At the same time the worn-out tissues are seized and burned up by the oxygen brought by the blood in the capillaries. Some of this liquor sanguinis is not used up by the tissues in the work of repairing their waste. This surplus is termed *lymph ;* it is collected up by a system of tiny tubes (Fig. 41), invisible to the naked eye, and commence in and lead from every part of the body, and are called lymphatics. They unite into somewhat larger tubes, which finally convey the lymph to the *thoracic duct*, the main trunk of the lymphatic system, which is a tube about twenty inches in length, about as thick as a slate pencil. It is placed along the

front of the vertebral column and pours the lymph into a great vein near the heart. The quantity of fluid in the tissues is supposed to be constantly pushing forward that in the lymphatics and so causes a regular circulation in those vessels towards the

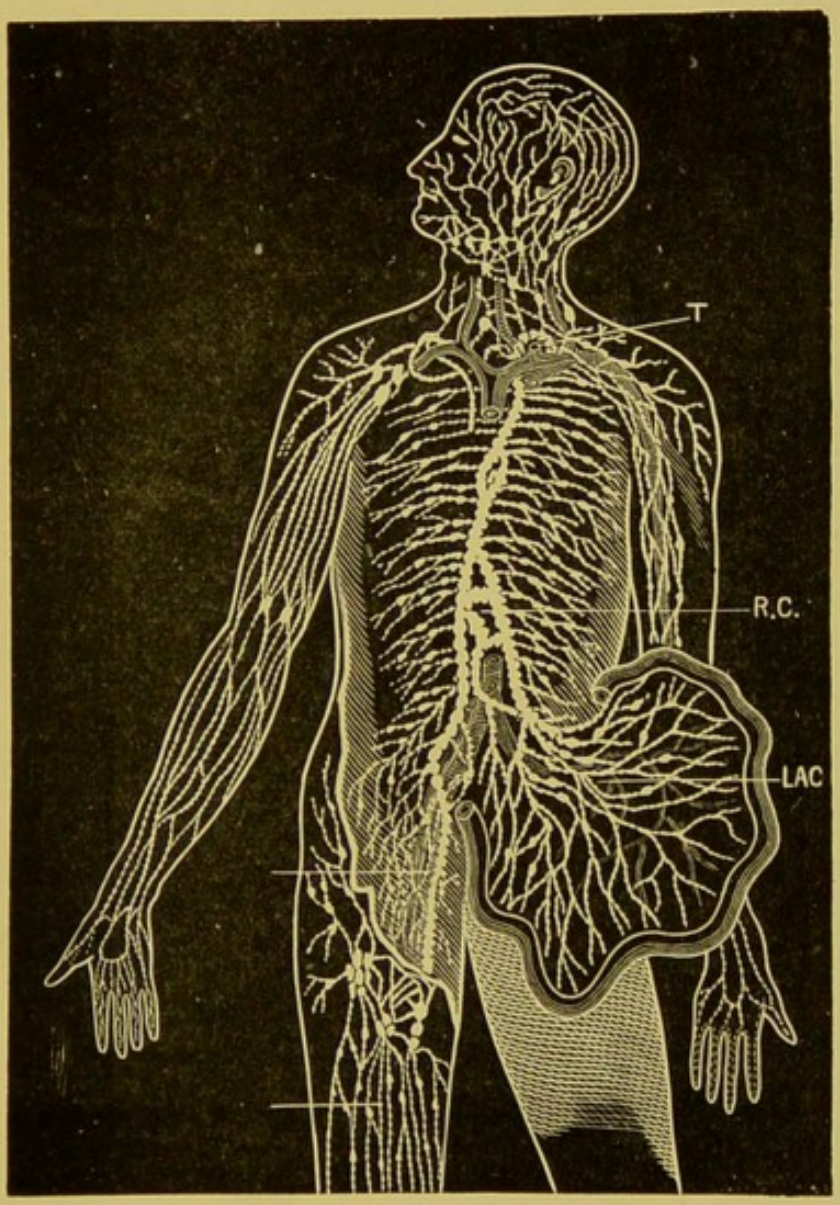

FIG. 41.—THE LYMPHATIC SYSTEM.—T, thoracic duct. R.C., receptaculum chyli. LAC, lacteals.

thoracic duct. Let us consider in what way the venous and lymph circulations are effected by a treatment so seemingly superficial as massage manipulations. Natural obstacles to the circulation are gravity and the friction of the blood against the walls

of the vessels. The resistance to the blood stream is greatest in the capillary area. By massage these hindrances are in great part removed. The contracting hands of the manipulator resemble two more propelling hearts at the peripheral ends of the circulation co-operating with the one at the centre, not indeed increasing the activity of the heart, but lightening its labours. As with the capillary blood system (which we may compare to our irrigation system), so in this respect is it with the lymphatic system, which we may liken to a drainage apparatus or system of pipes. All conditions which increase the pressure upon the juices of the tissues increase the amount of lymph. Muscles in action favour the pouring out and formation of lymph, and the *passive* muscular movements act in the same way.

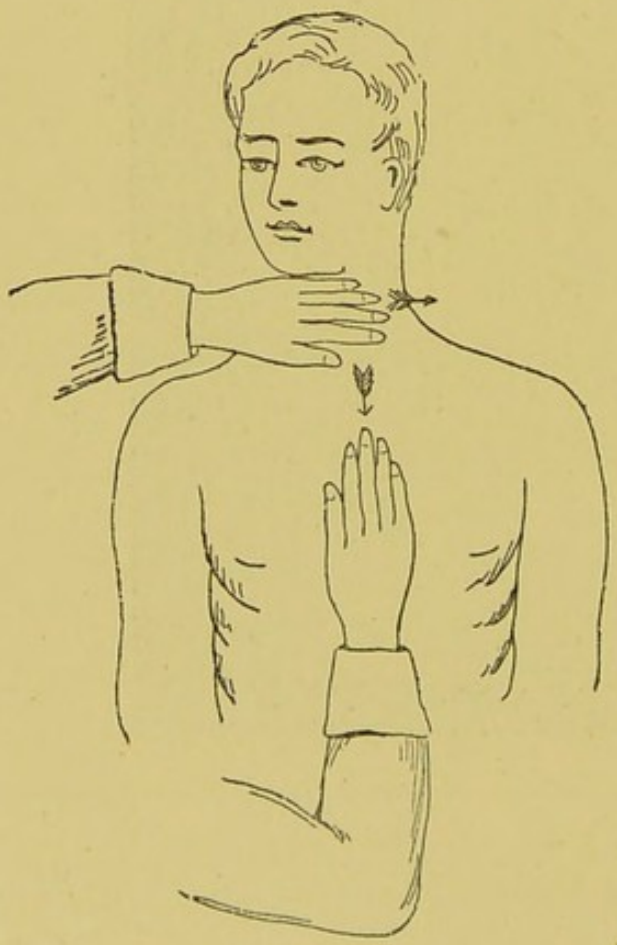

Fig. 42.—Throat and Chest.

Let us now practically apply massage manipulations to the throat, chest, and heart.

Standing on the right side, close to the patient, place your hands at right angles (see Fig. 42). With the fingers of the left hand (slightly inclined) you friction smoothly and evenly round the

throat, keeping the thumb on the right, while at the same time you bring down your right hand firmly as far as the transverse colon—glide up; perform this movement with both hands about twenty times. Take care to keep the fingers well together, or in massing a very stout person the result might be very painful. This movement favours the expansion of the lungs, aiding respiration, and is also beneficial to the digestive organs. In cases of acute catarrh of the pharynx, or the nose, this relieves the inflammation of the mucous membranes and assists expectoration.

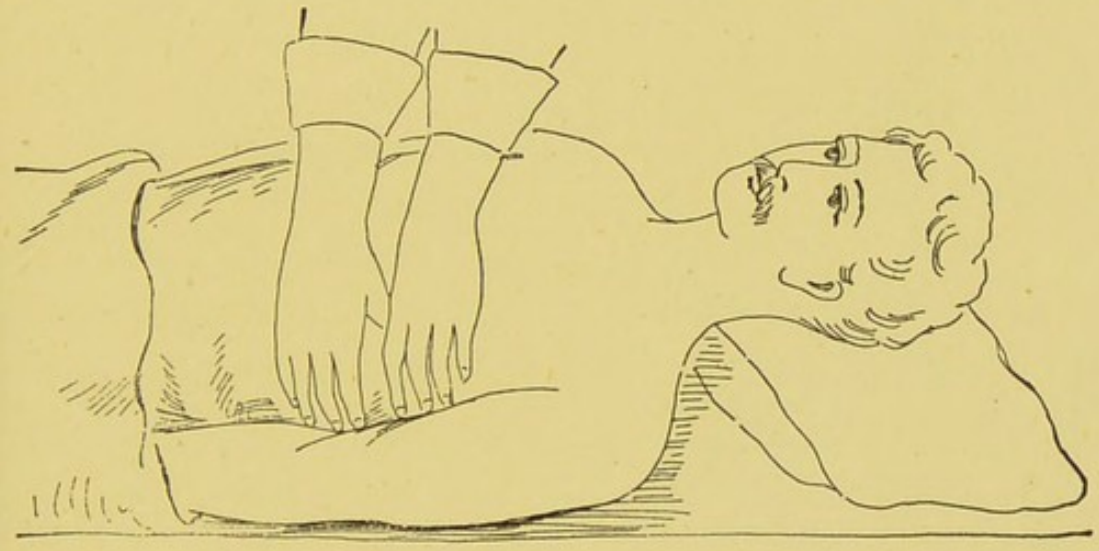

Fig. 43. Swedish Movements for the Heart.

You next stand in the position indicated in Fig. 43, and place your fingers and thumb (slightly extended) firmly over the heart, then give a secousse or jerk from your own shoulder, altering the position of your hands at every jerk, till you have passed over the entire region of the heart. Next, separate and extend the fingers of the right hand and place them firmly over the heart, then make deep circular pressions five or six times; after which, steadying your

patient's right shoulder with your left hand, give a firm and comforting friction over the cardiac region with your right hand. These movements apply only to weak circulation and spasm of the heart.

Chapter XI.

STRUCTURE AND MASSAGE OF THE ABDOMEN.

The *abdomen*, or lower chamber of the trunk, is separated from the thorax by the diaphragm, a large flat muscle, which forms the floor of the thorax and the roof of the abdomen.

The abdomen contains (Fig. 44) the stomach, the small and large intestines, the liver and gall bladder, the spleen, the pancreas, the kidneys, and the bladder.

The *stomach* is a kind of curved bag with two openings: one called the *cardiac orifice* (where the gullet terminates), the other the *pylorus*, which leads to the small intestines. It is situated immediately under the diaphragm and on the left

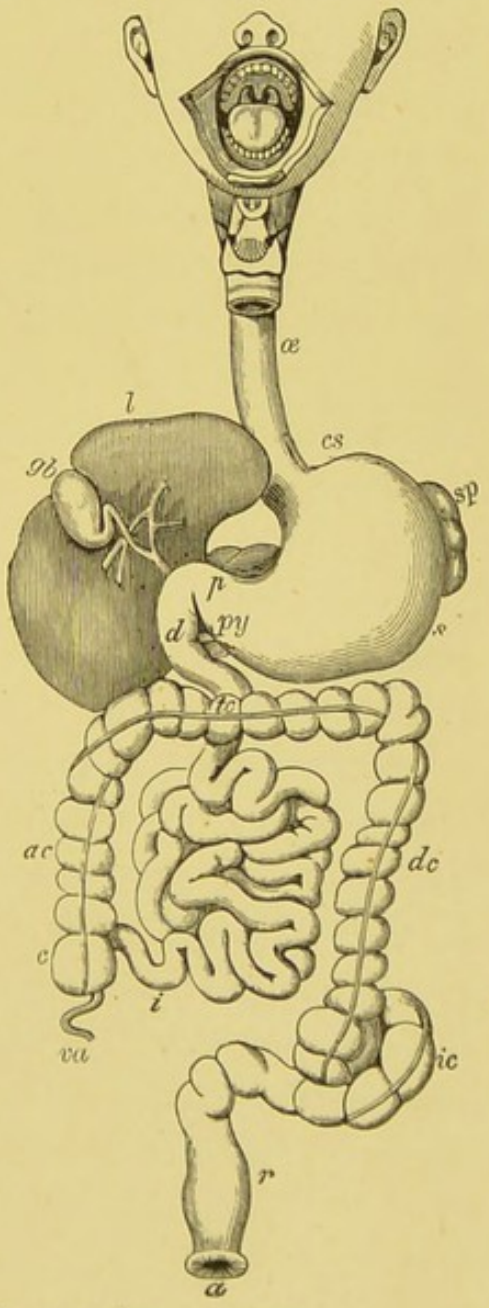

Fig. 44.—The Alimentary Canal — *œ*, œsophagus. *cs*, cardiac end of stomach. *sp*, spleen. *s*, stomach. *p*, pancreas. *d*, duodenum. *py*, pylorus. *l*, liver. *gb*, gall bladder. *va*, vermiform appendix. *c*, cæcum. *ac*, ascending colon. *tc*, transverse colon. *dc*, descending colon. *ic*, iliac colon. *i*, ileum. *r*, rectum. *a*, anus.

side of the abdomen. The gullet, in passing down to join the stomach, pierces the centre of the diaphragm.

The *intestines* consist of a long tube or canal which winds about in different ways and fills the greater part of the abdomen. This tube, if stretched, measures about twelve yards. The intestines are divided into large and small. The latter form the beginning of the tube and join the pylorus at the right end of the stomach. The large intestines form the end of the tube, and consist of three parts—the ascending colon, the transverse colon, and the descending colon. It is further divided into the cæcum, the colon proper, and the rectum. The *cæcum* is a blind pouch at the commencement of the large intestine, that is, in the right iliac fossa. It is liable to suffer from acute and chronic inflammation, from accumulation of fæcal matter, and to cause obstruction and constipation. Massage of this part is very important in such case. The *rectum* is the termination of the large intestine.

The *liver* is a large reddish-brown organ situated immediately under the diaphragm and occupying the upper part of the right side of the abdomen. Its average weight is five pounds, length twelve inches, breadth six or seven inches. A small bag in the liver, called the *gall bladder*, secretes about two ounces of a greenish fluid called bile, which is of the utmost importance in the process of digestion. The bile is poured from the gall bladder into the first part of the small intestines, about fifty ounces being secreted in twenty-four hours.

The *spleen* is a soft, bluish-purple, highly distensible organ, found in contact with the cardiac end of the stomach. It is called a blood-gland. Its function has

not been fully determined, but it probably acts as a kind of reservoir for the blood during the time the portal circulation is loaded in the first stage of digestion.

The *pancreas* is a smaller gland than the liver and usually measures from six to eight inches. It secretes a fluid termed the pancreatic juice which is necessary for the digestive process. It is situated behind the stomach. A short canal, the pancreatic duct, carries the pancreatic juice from it into the small intestine, just where the gall bladder pours in the bile.

The *kidneys* are two important glands, bean-shaped and of a brown colour, about four inches in

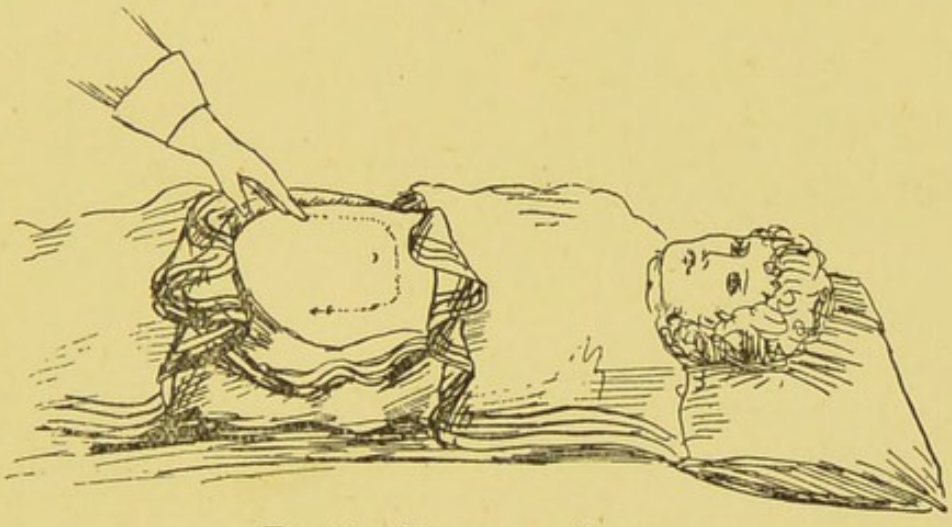

Fig. 45.—Massage of Colon.

length, two in breadth. They are embedded in fat and situated one on each side of the upper lumbar vertebræ, therefore behind the intestines. Their function is to purify the blood by carrying off the poisonous waste substance called the *urea*.

The *bladder* is a reservoir for holding the urine which has been secreted from the blood by the kidneys. It is situated at the base of the abdomen in the basin formed by the pelvis. Having considered the important and delicate organs of this region, let us see what massage manipulations we should apply.

For the first movement see Fig. 45. Standing on the patient's right, extend and straighten the fingers of the right hand (Fig. 45) and place them firmly and carefully at the commencement of the ascending colon (the cæcum). Move the fingers with firm even pressure, following the course of the colon from right to left. Remove the hand when it reaches the iliac colon and place it again on the right side over the cæcum. Bear in mind to make the same pressure from start to finish, keep the wrist sufficiently low to guard against the possibility of the nails being felt. This movement having been repeated six or seven

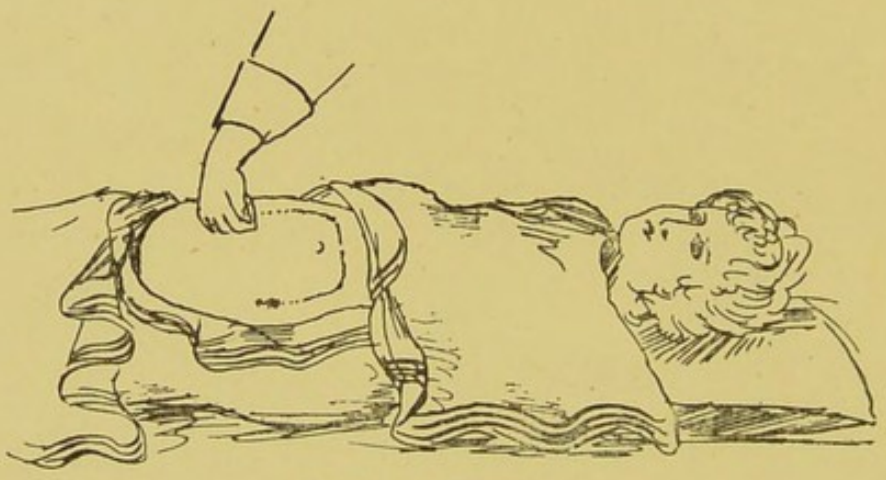

Fig. 46.—Corkscrew.

times, we then perform a movement which, for want of a better term, I name "the corkscrew". The thumb must be tucked in and the hand clenched to make it round, so that one knuckle is not felt more than another; you then proceed again over the course of the colon (Fig. 46) (commencing at the cæcum and finishing at the left iliac fossa), as shown in Fig. 46, screwing the fist completely round at each movement. For a normal-sized patient, about six or seven turns of the wrist will traverse the colon. Repeat this movement several times. Should the patient be

either very obese or very emaciated, a pillow may be placed under the knees to relax the abdominal muscles.

This done, we now face the patient, and taking the body, just below the diaphragm, firmly between the extended hands, place the thumbs at the end of the sternum and bring them down with good pressure in the direction of the colon, forming the letter *V* inverted. Glide up and repeat the movement several times, working only with the thumbs. This is an excellent movement for treatment of indigestion.

You now relax your hold and with both hands clenched place them together on the centre of the transverse colon. Keep wrists and elbows up, stand well over your work, and with even pressure follow the course of the colon, making a semicircle.

In either of these movements with the shut fist, the hand must be put down very cautiously; no hurrying or jerking is to be allowed.

We next manipulate the region of the liver. Functional activity of this organ being most important to health, and derangement of it causing constipation, indigestion, and other intestinal troubles, it would be waste of time to masse the intestines without including the liver. There is no treatment for torpid liver so permanently successful as massage has proved.

Stand on the left of the patient, lean over and with the fingers extended, but partly inclined, place the hands well under and press and friction towards you, the hands working alternately; then, still standing in the same position, thoroughly knead the entire region. This done, you return to the right side and knead the entire abdomen, and where much spongy fat exists and it is desirable to reduce or get

rid of it, a quarter of an hour should be devoted to this movement alone each time the patient is massed, never forgetting that the hands must be sparingly oiled, or powder used, otherwise the manipulation will be painful, which is unnecessary and improper treatment. We now steady the patient by placing the left hand under the right side, and with the open flat right hand rub the entire abdomen (see Fig. 47). Stand even with the patient so that you work without turning the hand. Should it be turned, you lose the even pressure which it is most desirable to maintain. I always commence this movement in

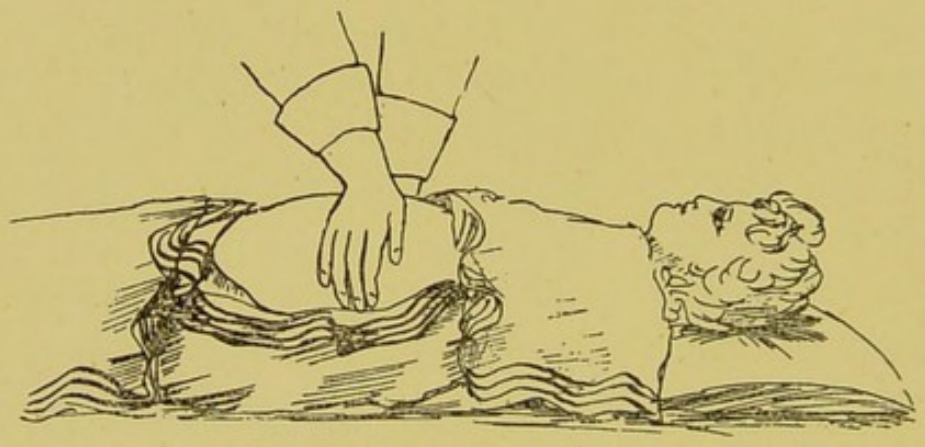

Fig. 47.—Rubbing the Abdomen.

the centre, and commence the return movement in the centre, by which means jerking is avoided. Too much attention can hardly be given to these minute details, as the observance of them, trivial though they may appear, adds greatly to the comfort of the invalid.

The next two movements I am about to describe hardly come under the head of hygienic massage, as they are for use after confinement, therefore midwives will understand their value.

The body is in the first movement taken carefully, the hands nearly meeting round the abdomen,

and brought slowly and gently up as shown in Fig. 48. This should be repeated several times; then standing more to the side, extend your hands and fingers, and with the wrist very low place the extended fingers over the descending colon and with fair pressure draw them to the centre of the abdomen,

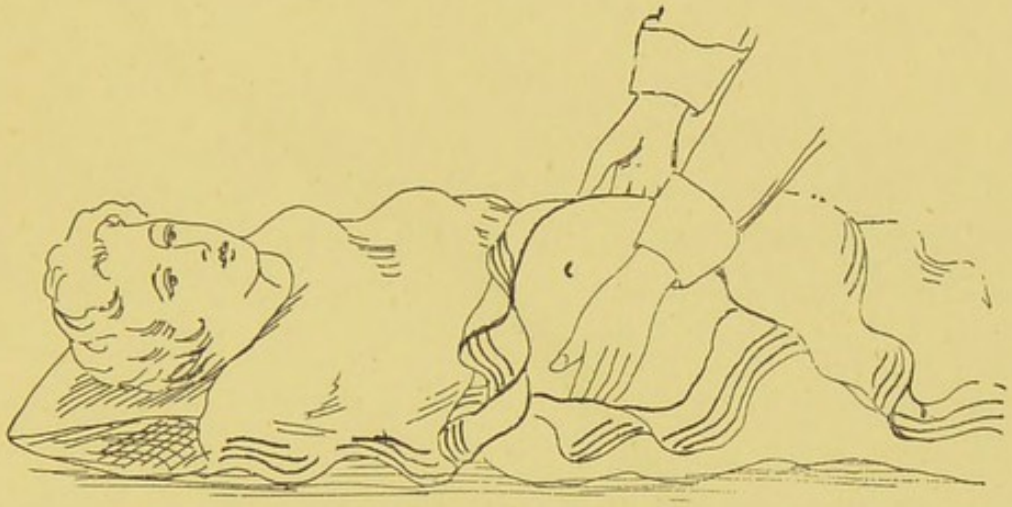

Fig. 48.—Pressing Abdomen (Midwifery).

using hand over hand alternately until a complete circle of the abdomen has been made. This movement is especially to assist the contraction of the uterus, and is also advisable for hygienic massage of the smaller intestine. I name it "the spider" movement.

Chapter XII.

STRUCTURE AND MASSAGE OF THE BACK AND HIPS.

The spine, reaching from the base of the skull to the lower end of the trunk, comprises seven cervical vertebræ, twelve dorsal, five lumbar, the sacrum, and coccyx. Behind the bodies of the vertebræ lies the spinal canal, in which the spinal cord (a prolongation of the brain) is contained and protected, and in which the spinal nerves also have their roots. The lateral projections of the vertebræ, termed transverse processes, and the backward projection, called the spinous process, are principally for the attachment of muscles. These processes or spines are largest in the loins to allow of movement and to afford attachment to the strong muscles which erect the spine (Fig. 49). In the neck the transverse processes are pierced by a hole through which an artery ascends to the cranium. The hip-bones (ossa innominata) form, together with the sacrum and coccyx, a fixed base of support for the lower limbs, forming a strong hoop called the pelvis, and join together in front to form the pubic arch. These bones are connected by strong external and interosseous ligaments. A white fibrous cord, *Poupart's ligament*, strengthens the lower part of the walls of the abdomen. The muscles of the region have been already described.

We will now proceed to masse the back. Raise the two edges of the blanket, hold them closely

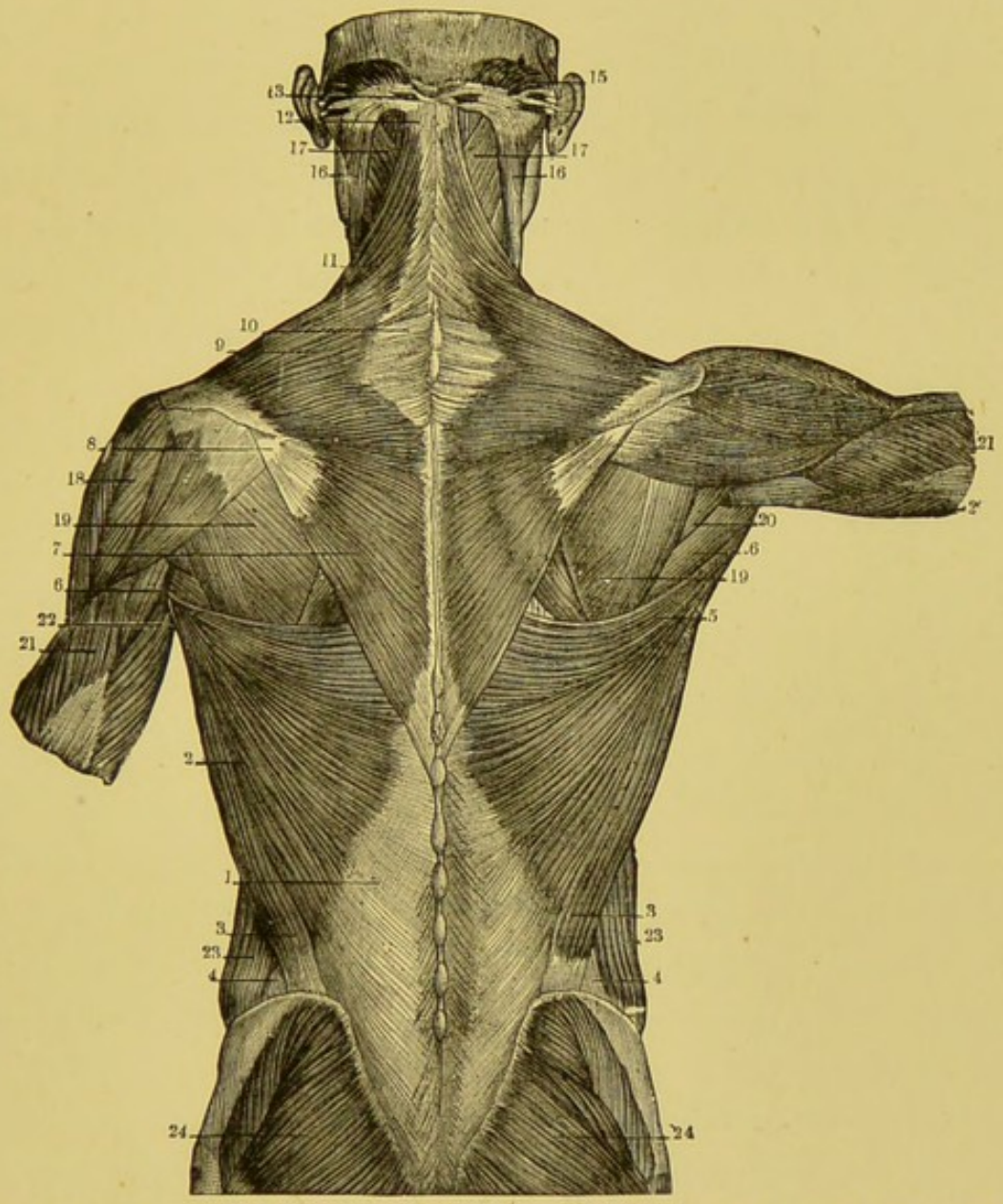

FIG. 49.—THE SUPERFICIAL MUSCLES OF THE BACK.—1, the lumbo-sacral aponeurosis. 2, the latissimus dorsi. 3, its iliac fasciculus. 4, the space which separates it from the external oblique. 5, the upper portion of the latissimus dorsi. 6, 6, the teres major muscle. 7, the lower portion of the trapezius with its aponeurotic portion (8) on a level with the spine of the scapula. 9, the central portion of the trapezius with its aponeurosis (10). 11, 12, 13, the upper portion of the trapezius. 15, the occipito-frontalis muscle. 16, the sterno-cleido-mastoid. 17, the splenius capitis. 18, the deltoid. 19, the infra-spinatus. 20, the teres-minor. 21, 21, the external head, and 22, 22, internal head of the triceps brachialis. 23, the posterior portion of the external oblique of the abdomen. 24, 24, the gluteus maximus.

together at either end and let the patient turn on her face. Support the left shoulder with the left hand.

Straighten your right hand and friction briskly up and down the extreme length of the spine, glide up, press down, let no part escape. Repeat this many times. Next separate the index and second finger and run up and down with a finger on each side of the spine with the same rapidity and pressure.

Our next movement is "pincement," or pinching, which, however, is not at all painful if properly done. Work first on the right side of the spine, raise the wrists slightly, rest the thumbs on the spine and with the ball of the fingers bring forward the muscle towards the thumb and in this way knead quite up to the neck. Repeat the movement on the left, now letting the *fingers* rest on the spine, and bring up the muscle with the thumbs. Thus each side of the spine is thoroughly kneaded and the spinal nerves as far as possible reached. We next "swoop down" the spine. This movement (in connection with others which I shall show and explain further on) is invaluable for insomnia. Beginning at the nape of the neck, the hands are worked rapidly one after the other, as shown in Fig. 19. There should be no *flicking* with the hands, which should not be taken further from the body than is absolutely necessary to enable one hand to follow the other. With a warm, fleshy, soft hand, this movement sends a glow through the whole system and is most delightful to the invalid. I have frequently induced sound sleep through massage of the spine alone.

Next incline the fingers of the right hand and roll back the trapezius muscle, continuing the pressure and making the ulnar side of the hand fit round the border of the scapula, glide up, pressure down. Next firmly friction the entire shoulder, accommodating

the hand to the roundness of the limb. This done, we cover the back as far as possible and uncover the loins. Steady the left shoulder with the left hand and friction the loins from right to left, with the open flat hand, very rapidly and with good pressure, till a thorough glow is created in the lumbar region. Take care not to jerk the body.

We again uncover the back and go through the various movements. In this instance, as in others, one must be guided by the condition of the patient as to the most suitable movements to be employed. I have always the greatest objection to rough and violent movements in massing any part of the body, and the great success I have had personally, and the praise bestowed on my pupils by their patients, encourages the belief that my methods are correct. In an ordinary hygienic massage I should use pointed vibrations, "the flail" and claquement, but where a patient is unhealthily fat, I should use "pincement" all over the body for a considerable time, and on the back should do "chopsticks" also. The back is then smoothed or stroked all over and finally covered.

Chapter XIII.

MASSAGE OF THE FACE.

The structure of the cranium and the distribution of the sensory nerves and the muscles having elsewhere been described at some length, we will now consider the manipulation of the face, invaluable for the cura-

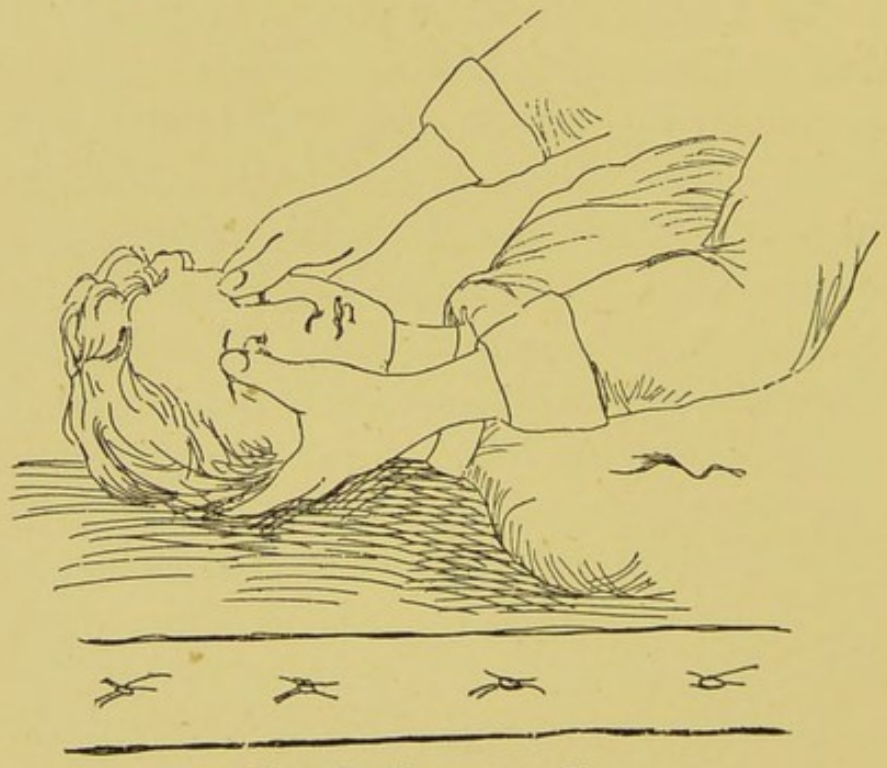

Fig. 50.—Massage of Eyes.

tive treatment of headaches, brow ague, neuralgia, failing sight, giddiness, etc.

The patient being in a sitting position, take the head firmly in both hands (having powder on the fingers instead of oil), keep the wrists low, and with

the ball of the thumbs effleurage with moderate pressure over the closed eyelids (Fig. 50) for about five minutes. Then keeping the thumbs stationary above the bridge of the nose, effleurage with the fingers outward over the brow (Fig. 51) and temples (supra-trochlear, supra-orbital, auriculo-temporal) with a pressure that can be felt but must never be painful. For brow-ague I effleurage with the entire thumb from the centre outwards (still holding the head firmly between the hands) over the entire frontal eminence. I know by experience that these move-

Fig. 51. For Neuralgia.

ments, if scientifically performed, will remove the most distracting headaches in a few minutes.

I will now describe two Swedish movements which are excellent for cure of neuralgia of the head. Clench the right hand and with the *ball* of the thumb (Fig. 52) make rotatory pressions (sort of screw movement) over the brow. During the paroxysm the nerve is contracted and the vessels dilated. This movement stretches the one and relaxes the other. Repeat six or eight times, then do "the flail" (with the ulnar side of the little finger) over the brow (Fig. 53). By

the time this is done the pain should be relieved. My patients tell me the effect is as though a heavy cloud were removed from the brain. For facial

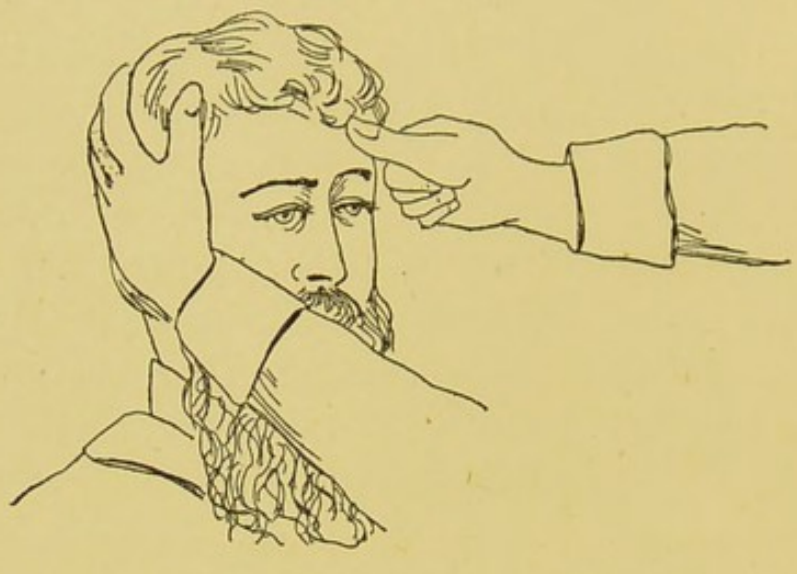

Fig. 52.—Punctations on Brow for Neuralgia.

paralysis use the following movement also. Place the *thumb* in the mouth, press it against the cheek,

Fig. 53.—Flail for Neuralgia.

and with the fingers make circular frictions over the superior and inferior maxillary regions. For further massage of the head see the chapter on insomnia.

Chapter XIV.

THE NERVOUS SYSTEM.

The nervous system consists of two distinct parts (Fig. 54).

I. The *brain, spinal cord* and *cerebro-spinal nerves,* which form an unbroken connection between the external parts of the body, the muscles, the sense organs and the brain (Fig. 55).

II. The *sympathetic system,* which is connected with the organs of digestion, circulation and respiration.

Nerve tissue is the soft, marrow-like substance which forms the principal part of the brain, the spinal cord, the sympathetic ganglia and the nerves.

In the brain the inner part is white and the outer layer grey, or greyish-pink colour; while in the spinal cord the inner part is grey and the outer white. The nerves consist entirely of the white matter. The coloured matter is more abundantly supplied with blood-vessels than the white. The brain performs its functions by the oxidation (or burning) of its nerve tissue, so that every thought, every sensation, or effort of will which proceeds from the brain, destroys part of its substance. Nerve fibres are actually so many parts of the brain and spinal cord extending into almost every corner of the body.

They have the appearance of slender silvery-white

threads. A certain number of these fibres, enveloped in a sheath, form a nerve. Some of these

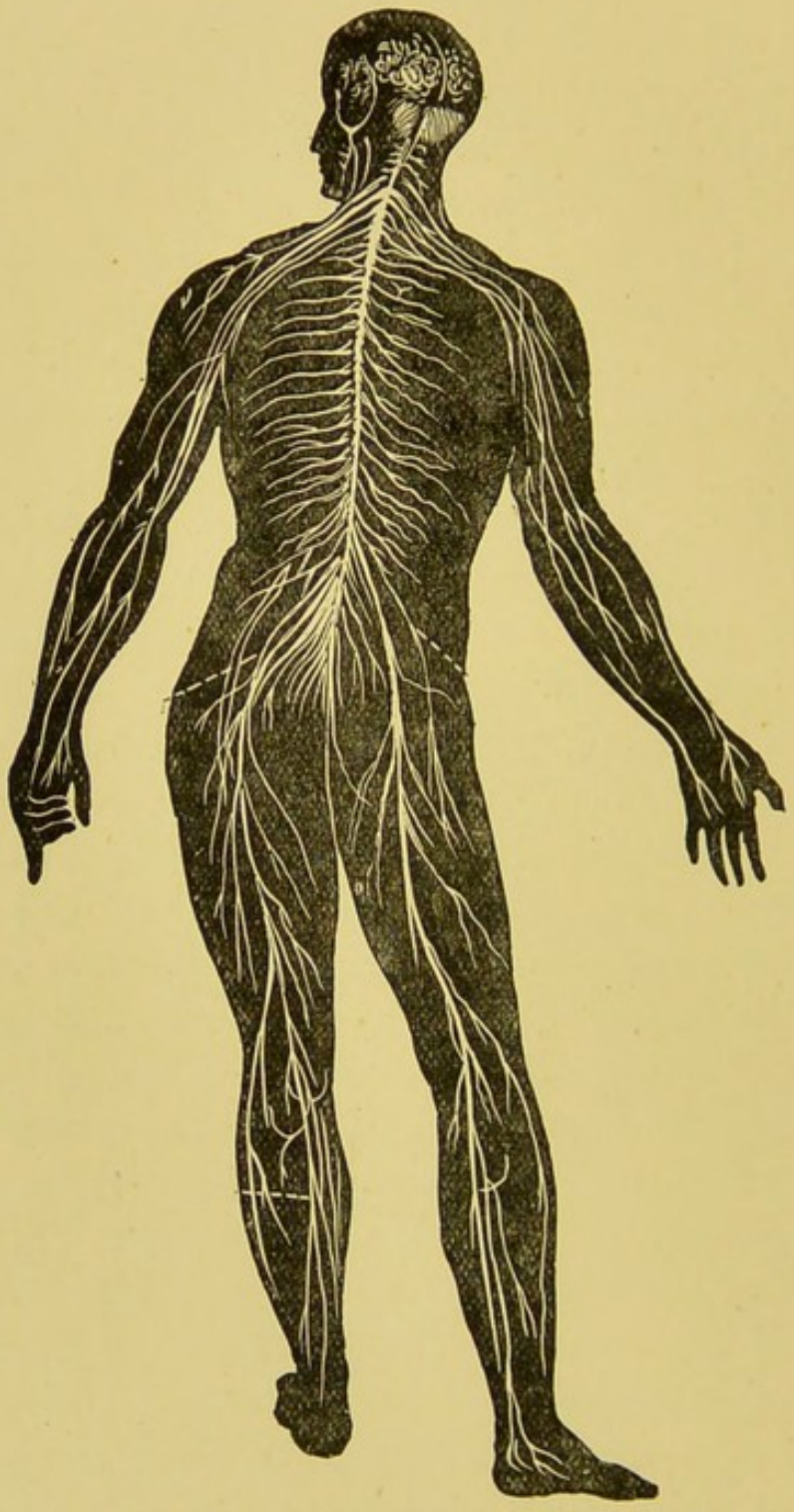

Fig. 54.—General Plan of the Nervous System; Origin of Cranial Nerves.

nerves are coiled round and among the muscles of the body and carry to them the commands of the

brain, thus causing them to contract. These are the *motor nerves.* Others proceed from the various parts of the body to the head centre and convey to it numerous impressions or sensations. These are the *sensory nerves.* A sensory and a motor nerve generally run side by side, forming one main trunk, each continually sending off numerous branches on all sides.

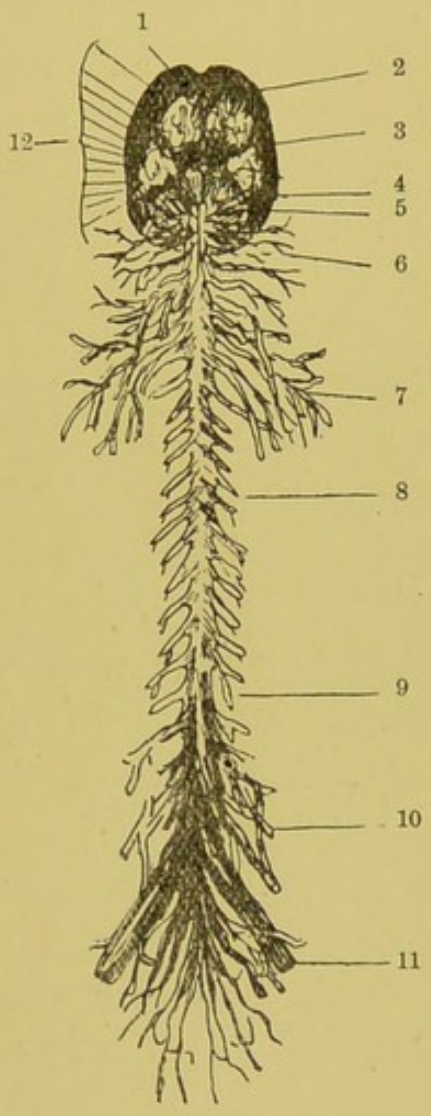

FIG. 55.—BRAIN AND SPINAL NERVES.—1, great longitudinal fissure. 2, anterior lobe. 3, middle lobe. 4, medulla oblongata. 5, cerebellum. 6, first spinal nerve. 7, brachial plexus. 8, dorsal nerves. 9, lumbar nerves. 10, lumbar plexus. 11, sacral plexus. 12, cranial nerves.

The three principal masses composing the brain are :—

I. The *cerebrum*, or brain proper.

II. The *cerebellum*, or lesser brain.

III. The *medulla oblongata.*

The *cerebrum* comprises about seven-eighths of the entire mass and fills the upper part of the skull. It has a convoluted appearance and is divided into six distinct lobes. The inner portion consists of white nerve matter and has an outer layer about one-eighth of an inch thick of pinkish-grey nerve substance. The active powers of the intellect, the will, and the emotions are lodged in the cerebrum, presumably in this outer layer. The more highly developed the folds, the greater the mental powers of the individual.

The *cerebellum*, or lesser brain, lies beneath the back part of the cerebrum, from which it is separated by a tough membrane (*dura mater*) whose function is to carry blood to and from the brain.

The functions of the cerebellum are not fully determined. It is supposed to exercise an influence over the muscles of the body so as to regulate their movements, and to be the seat of vertigo.

The *medulla oblongata* is the thick upper portion of the spinal cord which is contained within the cavity of the skull. It is about one inch and a half in length and from a half to three-quarter inch thick at the upper extremity. The seat of sensation is presumably lodged in the upper part of the medulla oblongata, while the lower part exercises control over the action of the lungs and heart. Injury to the upper part of the medulla causes loss of sensation. Should the connection between the cerebrum and the body be broken it will cause loss of power of will and voluntary movement. Injury to the lower portion of the medulla stops the action of heart and lungs, causing instant death.

The *cranial nerves* consist of nine pairs distributed symmetrically on the two sides of the body.

First nerve.—*Olfactory* (or nerve of smell), sensory.

Second nerve.—*Optic* (nerve of sight), sensory.

Third nerve.—*Motor oculi* (mover of the eye), motor.

Fourth nerve.—*Trochlear* or *pathetic* nerve (controls the muscle which gives expression to the eye, and sends filaments to the lachrymal gland), motor.

Fifth nerve.—Divided into three great parts, hence its name *trigeminal* or *trifacial* nerve. The upper and middle divisions are named respectively

the *ophthalmic* and *superior maxillary* nerves; they give off numerous branches supplying the eyeball, lachrymal gland, cavity of the nose, palate, gums and teeth of upper jaw, and form nerves of sensibility on the skin of the forehead, eyelids, nose, cheeks and upper lip.

The lowermost division, *inferior maxillary* nerve, supplies motor branches to the muscles of mastication, sensory branches to the tongue, teeth and gums of lower jaw, and skin of the lower lip and lower part of the face, being the nerve of common sensibility to those parts. The branch given to the tongue is termed *gustatory* nerve. The fifth is a mixed nerve.

Sixth nerve.—*Abducent* nerve governs the muscle which abducts or turns the eyeball.

Seventh nerve.—*Portio mollis* or *auditory* nerve is the sensory branch of the seventh, and is distributed to the deep parts of the ear. *Portio dura* or *facial* nerve is the motor branch of the seventh; supplies the muscles of the face and interlaces with the trifacial nerve. One important branch, *chorda tympani*, crosses the tympanum of the ear.

Eighth nerve.—Has three divisions. The upper, named *glosso-pharyngeal* nerve (sensory), affects the back and sides of the tongue, pharynx, soft palate, and tonsils. Appears to be the nerve of common sensation for the mucous membrane. The middle division is the *pneumo-gastric* (mixed). The trunk line of this nerve descends behind the great blood-vessels of the neck, passes down into the chest behind the root of the corresponding lung, thence downwards into the œsophagus, with which it perforates the diaphragm, and is finally distributed upon the walls of the stomach back and front. The pneumo-gastric

nerve in its motor capacity governs the vocal apparatus and entrance to the air tubes. In its sensory capacity it is the principal channel of communication between the cerebro-spinal nervous centres and the heart. The lowest division of the eighth is the *spinal accessory* nerve (motor). Part of it joins the pneumogastric, contributing motor fibres to the larynx. The rest is distributed to the sterno-mastoid and trapezius muscles. From their extensive distribution the eighth are also termed *par vagum*, or wandering pair of nerves.

Ninth nerve.—*Hypoglossal* nerve (motor), supplies the muscular substance of the under part of the tongue.

All the cranial nerves have communication with the sympathetic system.

The *spinal cord* is the continuation of the medulla. It passes through an opening in the base of the skull called *foramen magnum*. The grey matter of the interior of the cord sends off thirty-one pairs of nerves called spinal nerves, which pass out on each side of the vertebral canal by means of small openings between the vertebræ. Each spinal nerve contains two roots—one proceeding from the front portion of the cord and the other from the hinder part. These two roots unite and run side by side, forming one silvery thread as they pass between the vertebræ (Fig. 56). After leaving the spinal canal, each of these nerves is split up into finer and finer threads, which are distributed through the muscles and terminate on the *surface of the body*. Those roots which come from the front part of the cord are *motor* nerves. Their branches spread themselves through the muscles of the body and control their movements. Those which proceed from the back part of the cord are the *sensory* nerves. Their branching threads proceed

to the skin, where they become nerves of touch or feeling. Should any nerve be cut or injured as it leaves the vertebral column, the power of feeling and movement would cease in all those parts to which the branches of that nerve extend: *i.e.*, would be paralysed.

Injury to the anterior (front) root of the nerve will destroy the power of voluntary movement, but leave sensation unimpaired. Injury to the posterior (back) root destroys sensation, but leaves the muscles obedient to the will. Hence we deduct the front

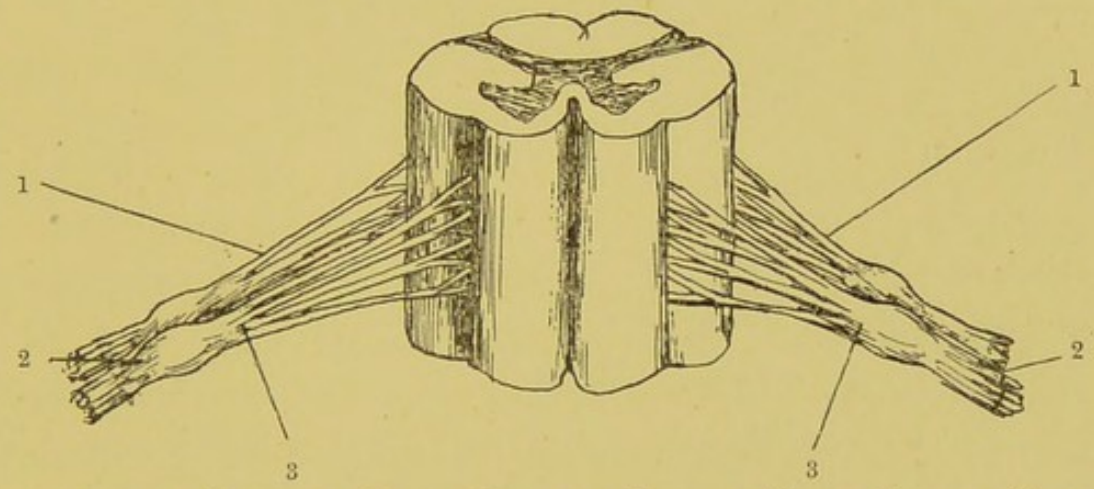

FIG. 56.—SECTION OF SPINAL CORD WITH ROOTS OF SPINAL NERVES: FRONT VIEW.—1, 1, sensory root. 2, 2, double nerve trunk. 3, 3, motor root.

roots are *motor*, the hinder, *sensory* nerves. Impulse sent up to the spinal cord by certain sensory nerves is reflected or sent back immediately, as a motor impulse to the muscles. This constitutes *reflex action.* The spinal cord also receives impressions from various parts of the body by means of its sensory nerves, and conveys them to the brain where they excite sensation or consciousness. It then transmits by means of its motor nerves the commands of the brain to the voluntary muscles and so causes movement. Reflex action is the most important function of the spinal cord. The brain itself has certain distinct reflex

actions, independent of the will, such, for instance, as a flash of light causing the eyes to blink, or instinctive shrinking from a threatened blow, or the sudden start of the body at a loud noise, etc. Should the spinal cord be accidentally crushed, the body below the injured part is paralysed. All active powers are confined to the grey matter of the brain and cord. Nerves have no independent sensation.

The *spinal nerves* consist of thirty-one pairs given off from the sides of the spinal cord. These are divided into

8 upper spinal or cervical nerves.
12 dorsal.
5 lumbar.
1 coccygeal.

Of these the lower cervicals, lower lumbar, and upper sacral are the largest.

The four upper cervical interlace to form the *cervical plexus*, supplying motor nerves to the neighbouring muscles, and sensory branches to the skin of the back of the head, the external ear, neck, and top of chest and shoulders. Another branch of this plexus, called the *phrenic nerve*, passes downwards, comes in contact with the pericardium, and descends to form the motor nerve of the diaphragm. The four *lower cervical* (together with the first dorsal) interlace to form the *axillary* or *brachial* plexus, and give sensory branches to the shoulder, upper part of the chest, and the skin of the upper limb; and motor branches to the muscles of the shoulder, arm, forearm, and hand. Two important branches, the *median nerve* and *ulnar nerve*, supply the nerves of touch to the fingers and hand. Should this *ulnar* nerve be

accidentally struck against the bone, the tingling sensation known as "touching the funny bone" is experienced.

The first dorsal nerve, as already said, joins the brachial plexus and supplies the first intercostal muscle. The remaining eleven dorsal nerves are called *intercostal* nerves, because they run along the spaces between the ribs. They communicate with the sympathetic system, and also supply the muscles of the walls of the chest and those on the sides and front of the abdomen.

The four *upper lumbar* interlace to form the *lumbar plexus*. They give off branches to the muscles and skin of the lower part of the front of the abdomen, to the muscles and skin of the hip, the outer side of the thigh, hip and knee joints, and the inner border of the leg and foot.

From the lumbar plexus are derived certain deep-seated nerves, *i.e.*, the *crural nerve* (from *crus*, the leg or thigh), which splits into numerous branches, some of which become cutaneous, while others accompany the great blood-vessels; also the *obturator nerve*, which comes out from the pelvis through the obturator foramen, gives off branches to the hip joint and neighbouring muscles, and interlaces with twigs of the crural nerve to supply the knee joint. Hence disease in the hip joint is often accompanied by a so-called sympathetic pain in the knee, though no positive mischief exists in the last-named joint. The last lumbar and four upper sacral nerves unite to form the *sacral plexus*, supply the muscles of the gluteal region, back of the thigh, leg and foot, with motor nerves; also supply sensory nerves to the skin at the back of the hip and thigh, front, outer side and back

of leg, also the back and sole of the foot. Of the deep-seated branches of the sacral plexus the largest is the *sciatic nerve* (the largest in the body). This sciatic nerve passes out at the back of the pelvis, runs deeply among the muscles behind the thigh-bone into the ham, giving off branches as it proceeds. One of these, the *posterior tibial*, passes beneath the muscles of the calf and behind the inner ankle to supply the parts in the sole of the foot. The sciatic nerve is the seat of *sciatica*.

The *sympathetic system*, it will be remembered, is connected with the organs of digestion, circulation, and respiration. The head-centre of this system consists of a chain of ganglia, or knots of nerve matter lying along each side of the vertebral column. These ganglia are connected with each other, and with the hinder (sensory) roots of the spinal nerves, by a net-work of grey nerve fibre. From these ganglia nerves proceed to all the internal viscera, forming a complete system by themselves and acting almost independently of the cerebro-spinal system. A close net-work of the sympathetic nerves is spread round the muscles of the heart, lungs, stomach, intestines, as well as round the walls of the minute arteries and capillaries. Under the influence of these nerves, the muscles of the arteries are caused to contract and thus the vessels themselves are reduced in size and the flow of blood retarded. This influence explains the phenomena of blushing and turning pale.

Seeing, then, the immense importance and extent of this great nervous system, it will be obvious what beneficial results can be obtained from thorough scientific massage, particularly with regard to the spine, also the head, neck, the cuticle, and the entire body in a greater or lesser degree.

Chapter XV.

THERAPEUTIC MASSAGE.

"The greatest gap in the science of medicine is to be found in its final and supreme stage, the stage of therapeutics. We want to learn distinctly what is the action of drugs and other influences upon the bodily organs and functions; for every one, now-a-days, I imagine, acknowledges that it is only by controlling or directing the natural forces of the body that we can reasonably hope to govern or guide its diseased actions." (Sir Thomas Watson in the *British Medical Journal.*)

"Medicines are classified according to a vague idea of their chief action. The chief and predominant action is described as the characteristic of all. To the student of medicine, or to the practitioner, this vagueness of arrangement is utterly useless and barren. It begets scepticism and haphazard practice. The real question at issue is: What is the principle to guide us in the selection of medicinal agents in the treatment of disease? In what direction does cure lie, how can I aid in the curative process, and how avoid doing mischief? If the Providence of God work by definite curative laws, how can I discover and use this knowledge?" (Dr. J. Kidd in *The Laws of Therapeutics.*)

"Our chief difficulty in comprehending Nature is

her simplicity—the multitude and boundless variety of results she educes from one law." (G. H. Lewis, *Cornhill Magazine*, October, 1860.)

These words were not written concerning massage, which was at that period in its earliest infancy as far as England was concerned. But how appropriate they are in the light of the wonderful remedial agent it has proved itself to be!

Chapter XVI.

ADIPOSE TISSUE.

The fat of the body, at the natural temperature, is an oily fluid, contained in roundish nucleated cells. This fluid fat escapes on the application of heat, or when the tissue dries. When the body becomes cold, small crystals of fat are seen lying in some of the cells. The fat pads fill up certain interspaces between and around the various organs of the body, especially those of the abdomen; it also accumulates in the hollows round the joints and between the muscles, and spreads over the surface of the body beneath the skin, giving roundness to the contours of the human form, and acts as a powerful non-conductor for the retention of heat within the frame. Fat is absent in the cranium, the lungs, and eyelids.

The adipose tissue constitutes a store of fatty nutriment which is always available for the purposes of the system when required. It exists abundantly in the chyle, in the blood, in most of the tissues, especially the nervous tissue, also in the secretions of bile and milk. It is always being consumed or combined with oxygen in respiration to afford animal heat. The excess of fat in the blood, not required for the nutrition of the tissues, or for the purposes of

secretion or respiration, is removed from the circulation and locked up, as it were, in the cells of the adipose tissue, from which, when necessary, owing to illness, prolonged abstinence from food, or interference with the digestive process, it can be retaken up into the impoverished blood. Fat is more abundant in the female than in the male. It becomes excessive in those who eat and sleep too much and take but little exercise, whilst it is reduced by the opposite conditions. The nature of food and drink has also much influence in the production of fat. There are, however, individual, family, and even national peculiarities in this respect, independent of habits and customs.

Fats are either wholesome or unwholesome, either firm and stable, or liable to rapid absorption and disintegration. A wholesome increase of fat should be accompanied by wholesome gain in the quantity and quality of the blood. Fat gained by massage is almost always accompanied by gain in blood. Excess of flabby fat, in addition to the unpleasantness of its weight and bulk, is liable to cause constant fatigue, breathlessness, and apoplexy. An obese patient, who is at the same time anæmic, is more difficult to cure than the emaciated, irritable, bloodless patient. In the first instance, our aim is to reduce the fat without reducing the strength. In the second, to increase the fat and the strength simultaneously. Fortunately the flabby anæmic fat dissolves very rapidly under massage treatment combined with a judicious dietary.

The dietary and treatment recommended by Dr. Stretch Dowse for this class of patient is so admirable that I take the liberty of quoting it.

Complete rest in bed. For first fortnight whey, lemon juice, dry toast, or whole-meal biscuits.

When an appreciable reduction in fat has taken place, give two glasses of burgundy and sixteen ounces beef juice in the twenty-four hours. Active massage of loins, buttocks, and thighs. Average loss of weight, ten pounds in ten days. Next dietary. At 7·30 A.M. four ounces well-grilled steak, cup of weak tea, drunk very hot and no sugar or milk. The juice of a lemon may be taken with the tea. 10 A.M., glass of beef juice. At 11, massage, particularly of abdomen, buttocks, and thighs. 12, glass of beef juice. At 1·30 P.M. two thick grilled mutton cutlets, free from fat and bone, dry toast, and a glass of good burgundy. At 4, galvanism. 5, beef juice. 6·30, beef juice. At 7, boiled sole, dry toast, burgundy. 9, a tumbler of whey and juice of lemon. A baked apple may be taken after each meal. No rice, bread, sago, tapioca, or macaroni. Fresh or stewed fruit may be used and half-a-pound cream allowed daily. In some cases milk cannot be digested even when skimmed. When it is ascertained that it certainly causes nausea and indigestion, it is unwise to persevere with it.

The massage for fat anæmic patients must commence with slow and gentle effleurage and pétrissage. The second week the manipulations may be amplified. The best hours are considered to be from 10 to 11 A.M. and 9 to 10 P.M. The lower limbs, the abdomen and buttocks, should receive special attention in the morning, the upper part and spine at night. It is also recommended to give a fortnight's rest from massage after six weeks' treatment, then resume. A safe rule is to commence gradually, and discontinue gradually ; that is, the first fortnight gradual increase,

the second fortnight sustained activity, the third fortnight gradual decline, then a fortnight's cessation. At the third week of treatment add electricity. Rest forms an important part of this treatment, of which I shall speak more fully in the chapter on hysteria.

Chapter XVII.

ANÆMIA, NEURASTHENIA, HYSTERIA.

Anæmia is primarily attributable to defective nutrition and impoverished condition of the blood. Rapid thinning, from whatever cause, produces various degrees of anæmia, as the blood thins with the rapid decrease of the tissues; gain in fat (to a normal extent) and improvement in colour denote its enrichment. Sudden and great loss of flesh is by no means advisable, neither is the fat gained by extraordinary dietary, which is most likely to vanish when the ordinary diet is resumed. But the fat acquired by general hygienic massage, *combined* with judicious dietary, tonics and electricity, is the most stable of all, gained as it has been by enriched blood and general bracing of muscles and tissues. Commence daily treatment with twenty-five minutes massage, gradually increasing to an hour. Ascertain the temperature of the patient and be sure to leave the extremities warm.

For dietary and Weir-Mitchell rest treatment, see chapter on hysteria.

Neurasthenia may be described as nervous exhaustion or debility, caused by want of tone or stamina in the nerve centres.

"Its victims always ailing, seldom ill" (Sir A. Clarke). Some of the leading characteristics are

defective memory and will power, and absence of mental concentration, with great variety of mood, and capriciousness. There will probably be clammy feet and hands, tenderness in parts of the spine, and constipation. From my own experience I venture to suggest that men who have been accustomed from youth to the daily routine of an active business life, or government service, etc., and who, on attaining a certain age, when they are still to all intents and purposes in their prime, but from accumulation of wealth, or pressure of juniors, abandon quite suddenly all their active brain work, would be very likely subjects for neurasthenia. The brain is allowed to rust, and this would seem to have a morbid effect on the nerve centres. To those who are able to develop a keen interest in fresh pursuits, the case is different. I am simply quoting one of the many causes of neurasthenia, *i.e.*, nervousness. Mental or physical shock is also a prolific cause, and the symptoms may not develop until some considerable time has elapsed.

The Weir-Mitchell treatment is recommended.

Hysteria.—A severe wound, some great grief, or a shock to the nervous system will often cause hysteria, and a second shock, strange to say, will sometimes act as a cure. But as we cannot count upon this second shock, we have to seek more dependable treatment. The most efficacious yet discovered is the Weir-Mitchell treatment. The leading characteristics of hysteria are : convulsions (bordering on epilepsy), spasms, vomiting, partial paralysis ; hysteria simulates all these. We also find occasional loss of voice, sighing, sobbing, great melancholy, contracture of the extremities, great obstinacy, and strange hallucinations. Railway or other collisions

are fruitful causes of this nerve degeneration, and the hysterical symptoms may not declare themselves fully for months after. There is also the hysteria which follows anæmia.

I will quote a case in point, that of a personal friend, a married lady, without children, who developed alarming symptoms of spinal affection and partial paralysis of the lower limbs. Being surrounded by sympathising friends and a devoted husband, she soon became a confirmed bed-ridden invalid and so remained for ten years. At the end of that time certain business events made it imperative that the husband should go to the Antipodes to see after his property. The idea of separation was heart-rending, and the wife determined to make one grand effort towards recovery. She tried massage and electricity, and in five weeks was enabled to undertake the voyage. The next news I heard was that she was riding many miles daily in mountainous districts, jumping ravines on horseback, etc.

Another interesting case was that of a young lady (24). The sudden death of her mother and grandmother almost simultaneously caused thorough prostration of the nervous system, from which she had no inclination to rouse herself, and, being surrounded by every luxury, she indulged in the belief that she was, and would be to the end, a confirmed invalid. She had irons made to fit round her ankles and come up as supports under the arms, without which she could not move from one room to another. If she dropped her handkerchief it must be picked up for her. In short, she was perfectly helpless. In the autumn it was her custom to go to the south of France to winter with friends. A suggestion was

made that she should try massage, with no idea of curing, but simply to try and strengthen her a little that she might undertake the journey. She came to London for treatment. Six weeks subsequently, two friends of hers were in an omnibus and to their amazement saw their former invalid friend jauntily mounting the stairs to the *top*. Curiosity prompted them to follow and make certain of her identity, and there beyond all doubt sat their friend, no longer pale and pensive but fat and rosy, a picture of health. The irons and bath-chair discarded, she was not even allowed to carry an umbrella, and told to go out alone and patronise the top of omnibuses. This she did, knowing that everything which could be devised was being done for her benefit. Apart from massage, the treatment adopted was novel, very curious, and, as results proved, excellent. After having been massed twice a day, faradised, and fed according to the orthodox Weir-Mitchell system for a month, she was by degrees made to walk on tip-toe, the arms extended and a weight on her head for a considerable time each day. The improvement continued and a perfect cure resulted. Instead of going abroad, as previously arranged, with her attendant, her irons, and bath-chair, she went as a hale and hearty woman, and on crossing the channel was delighted to be able to attend to a friend, who, like so many others on board, had to call in a faint voice "Steward!"

Chapter XVIII.

WEIR-MITCHELL DIETARY AND NURSE'S NOTE-BOOK.

Patient arriving, Tuesday, 23rd, at 3 p.m. Age, 26.
Weight, 7 stones 8 pounds.
(From my own note-book.)

3·30, milk, . . . 5 oz.	
6·30, milk, . . . 5 oz.	Doctor.
9·30, milk, . . . 10 oz.	

Wednesday, 24th.

7·30 a.m., milk, . 10 oz.	
9·30, black coffee.	
11, milk, . . . 10 oz.	
1 p.m., milk, . . 10 oz.	
3, milk, ... 10 oz.	
5, milk, ... 10 oz.	
7, milk, ... 10 oz.	
9, milk, ... 10 oz.	Stool.
11, milk, . . . 10 oz.	
(Milk 2 quarts.)	

Thursday, 25th.

7 a.m., black coffee.	
8, breakfast : cocoa, bacon, bread and butter.	

9, milk, . . . 10 oz.	
11, milk, . . . 10 oz.	
12, ...	Massage 20 minutes.
1 P.M., milk, . . 10 oz.	
3, milk, . . . 10 oz.	
4, ...	Massage 20 minutes.
5, milk, . . . 10 oz.	
7, milk, . . . 10 oz.	Stool.
7·30, fish, bread and butter.	Pill.
9, milk, . . . 10 oz.	Doctor.
11, milk, . . . 10 oz.	
(Total milk 2 quarts.)	

Friday, 26th.

7 A.M., black coffee.	
7·30, milk, . . 10 oz.	
8, breakfast: cocoa, egg, bread and butter.	
9·30, milk, . . 10 oz.	
10·45, ...	Massage 30 minutes.
11·30, milk, . . 10 oz.	Electricity 10 minutes.
12·20, P.M., ...	Medicine.
1, milk, . . . 10 oz.	
Dinner: mutton chop, cauliflower, potatoes, and bread.	
3, milk, . . . 10 oz.	
5, milk, . . . 10 oz.	
6, ...	Massage 30 minutes.
7·30, fish, bread and butter.	
8·30, ...	Medicine.
9·30, milk, . . 10 oz.	Enema.
11, milk, . . . 10 oz.	
(Total milk 2 quarts.)	

Saturday, 27th.

7 A.M., black coffee.	
7·30, milk, . . 10 oz.	
8, breakfast: cocoa, bacon, bread and butter.	1 Pill.
10, milk, . . . 10 oz.	
10·40, ...	Massage and electricity 45 minutes.
12, milk, . . . 10 oz.	
12·40 P.M., ...	Medicine.
1, dinner: boiled mutton, peas, bread, potatoes.	
3, milk, . . . 10 oz.	Doctor.
5, milk, . . . 10 oz.	
6, ...	Massage 45 minutes.
7, milk, . . . 10 oz.	
7·30, fish, bread and butter.	
9, milk, . . . 10 oz.	Pill.
11, milk, . . . 10 oz. (Milk 2 quarts.)	Stool.

Sunday, 28th.

7 A.M., black coffee.	
7·30 milk, . . . 10 oz.	
8, porridge and cream, bacon, bread and butter, cocoa.	
10, milk, . . . 10 oz.	Massage and electricity 45 minutes.
11, ...	Medicine.
12, milk, . . . 10 oz.	
1 P.M., dinner: chicken, peas, potatoes, stewed fruit, and custard.	

3, milk, . . . 10 oz.	
5, milk, . . . 10 oz.	
7, milk, . . . 10 oz.	
7·30, ...	Medicine.
8, supper: beef, bread and butter.	Stool.
9, milk, . . . 10 oz.	
11, milk, . . . 10 oz. (Milk 2 quarts.)	Massage only *once* on Sunday.

Monday, 29th.

7 A.M., black coffee.	
7·30, milk, . . 10 oz.	
8, breakfast: cream and porridge, egg, bread and butter.	
9, milk, . . . 10 oz.	
10·30, raw beef tea, 10 oz.	
11, ...	Massage and electricity 45 minutes.
12, milk, . . . 10 oz.	
1 P.M., dinner: sole, mutton chop, peas, potatoes, stewed fruit, and custard.	Medicine 20 drops.
2·30, milk, . . 10 oz.	
4, milk, . . . 10 oz.	Doctor.
5·30, milk, . . 10 oz.	
6, ...	Massage 45 minutes.
7·30, supper: chicken, tongue, bread and butter.	Enema.
9, raw beef tea, . 10 oz.	
11, milk, . . . 10 oz.	

Tuesday, 30th.

7 A.M., black coffee.	
7·30, milk, . . 10 oz.	
8, breakfast: cream and porridge, bacon, bread and butter.	Pill.
9, milk, . . . 10 oz.	
10·30, raw beef tea peptonised.	
11, ...	Massage and electricity 45 minutes.
12, milk, . . . 10 oz.	
1 P.M., dinner: chicken, ham, cauliflower, potatoes, bread, custard pudding, and fruit.	
2·30, milk, . . 10 oz.	
3·30, milk, . . 10 oz.	
5, milk, . . . 10 oz.	
6·30, milk, . . 10 oz.	Massage 45 minutes.
7·30, supper: fish, ham, bread and butter.	Pill. Stool.
9, raw beef tea peptonised.	
11, milk, . . . 10 oz.	
(Milk 2 quarts.)	Patient gained 3½ pounds during week.

I have now given one clear week's treatment. The next four weeks may with slight variation be the same as the 30th inst. Massage and electricity to be increased to one hour; more stewed fruit given and dinners varied, but of the same description as already prescribed. Massage, electricity, and feeding to be diminished gradually. The nurse should wash

and also feed the patient. It is not unusual that after ten days or a fortnight's treatment the patient will display great irritability and complain of excessive fatigue. These symptoms are perfectly correct and the treatment should under no pretence be discontinued. Doctor, nurse, and masseuse all labour under great disadvantages where the patient is not isolated, but treated at home surrounded by a fond mother and sympathising friends who will interfere (with the kindest intentions of course) and spoil what would otherwise be a perfect restoration to health, and thus the sufferer remains a grave care to her family and a misery to herself.

I was requested some time since to visit and give an opinion on the condition of a married lady (with six children). I found her suffering from hysterical paralysis. I offered to undertake the case if I could have her isolated, but not otherwise. The family would not hear of it, except under one condition, that the trusted nurse, who had been in the family for twenty-five years, accompanied her to attend her as usual, and as I declined on the plea that I should be taking her money uselessly, unless quite severed from home influence for a couple of months, I left her and she remains to this day in the same condition, a victim to prejudice of custom, which is deplorable, as she might so easily have been restored to health and activity.

Chapter XIX.

INSOMNIA.

This may proceed from various causes, and if of long continuance may have most serious consequences. It may result from an overtaxed condition of the brain, over-fatigue, sluggishness of cerebral circulation, or possibly after some period of physical suffering which has during its continuance made sleep impossible, the habit of sleep has become perverted. The sleep which is indeed "Nature's sweet restorer" is the peaceful, dreamless state from which we rise with vigour of body, activity of intellect, and, as a rule, good temper. If all sufferers from insomnia could but know the delightfully soothing effects of massing the spine and head, we should hear of fewer suicides through want of sleep. It is really hard to keep awake, even if you try to do so, when you have been massed for twenty minutes (scientifically) by warm, soft, fleshy, sympathetic hands full of animal magnetism. Bony, damp hands would certainly have the effect of keeping the patient awake, instead of inducing sleep.

If possible masse quite the last thing at night when the patient is in bed. Ascertain that the offices of nature have been performed, also that the feet are warm—if not, apply either warm flannel, a hot-water bottle, or massage.

Let there be very little light and no talking. Commence with gentle effleurage of the upper limbs and spine for ten minutes. Next, the patient having gently turned on to the back, and lying with eyes closed, gently and repeatedly stroke with extended fingers over the forehead upward through the hair (in front only). Then proceed with the facial massage described amongst the movements, all to be delicately

FIG. 57.—FOR INSOMNIA.

performed. You will rarely leave your patients awake after these manipulations, especially if you have thoroughly impressed them with the idea that they will be absolutely unable to keep awake after the process. Should it not be convenient, owing to the hour, or other causes, to have your patient in bed, I will describe another method. Let them be seated in front of you, rest the head against your

breast (Fig. 57), place your fingers about six inches

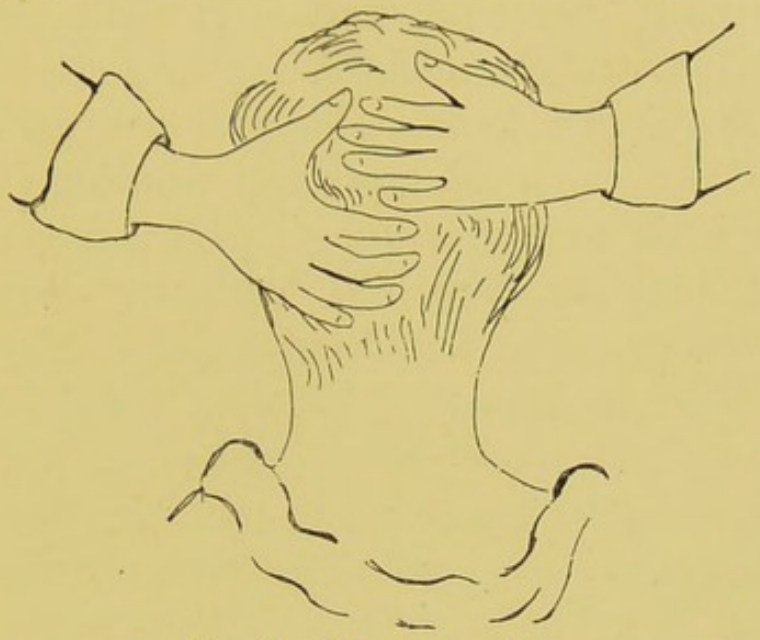

Fig. 58.—Massage of Head.

down the spine (as shown in Fig. 57) and with the

Fig. 59.—Friction of Temples.

palm make pressions to the crown of the head several

times. Then starting from the same vertebra, diverge as far as the ears and let the fingers again meet over the cerebrum. Next, make your palms concave, and grasping the head with moderate pressure, use circular frictions over the head, gradually working (Fig. 58) from the neck to the temples. Next, friction each temple alternately (Fig. 59), with the hands still concave and powdered. Other facial manipulations are described in former chapter on massage of the face. Let all the movements be of a gentle soothing character, and let the patient be put to bed as quickly as possible and left perfectly quiet, when a good night's sleep may be confidently looked for.

Chapter XX.

NEURALGIA, SCIATICA AND RHEUMATISM.

Neuralgia and Sciatica.—The fifth nerve gives sensation to the entire skin of the head and face (with the exception of the great and lesser occipital regions). Functional headaches, neuralgia, brow-ague, toothache, earache, "sick headache," are all to a great extent neuralgias of the fifth. From the fact that any exertion which increases the blood pressure in the head increases the pain, and from the distended appearance of the vessels on the affected side, we may attribute the primary cause to congestion or contraction of the muscular coat of the vessels (Fig. 60).

Massage manipulations which disperse this congestion, relax the nerves, and generalise the circulation in the affected region, will decrease the pain. Neuralgia may also be caused by the pressure of a decayed tooth, or have a deeper origin, that is, in the sympathetic nerves and ganglia.

Tenderness of the spine corresponding to the origin of the painful nerve may sometimes be discovered. The large sciatic nerve (which supplies the muscles of the back of the thigh, the hip joint, back of the patella and foot, and outer malleoli) is very subject to neuralgia, which is in this instance termed

sciatica. The crural nerve supplies the muscles on the front and inner side of the thigh and branches to the leg, foot and knee. In addition to the manipulations already described for the lower limb, the greatest relief can be obtained in either of these neuralgias

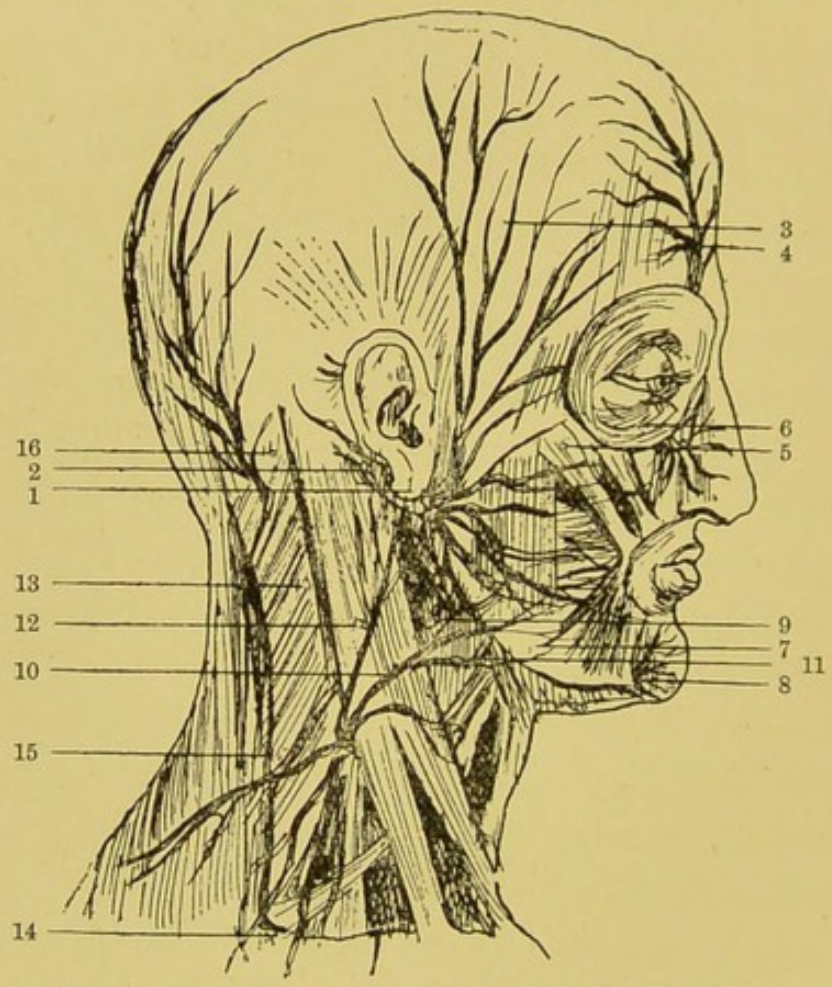

FIG. 60.—DISTRIBUTION OF THE FACIAL NERVE AND BRANCHES OF THE CERVICAL PLEXUS.—1, the facial nerve, escaping from the stylo-mastoid foramen and crossing the ramus of the lower jaw. 2, the posterior auricular branch. 3, temporal branches communicating with 4. 4, branches of the frontal nerve. 5, facial branches communicating with 6. 6, the infra-orbital nerve. 7, facial branches communicating with 8. 8, the mental nerve. 9, cervical branches. 10, superficialis colli nerve. 11, sub-maxillary gland. 12, auricularis magnus nerve. 13, the occipitalis minor. 14, superficial and deep-descending branches of the cervical plexus. 15, spinal accessory nerve. 16, occipitalis major nerve (branch of the second cervical nerve).

(but especially sciatica) from stretching the nerve. This is to be done by flexing the affected thigh on to the abdomen, then thoroughly extend the limb, and having your left hand pressed *very firmly* below the knee joint, raise the heel with the right hand, thus

forcibly extending the nerve. Mild faradic current may be applied when there is no pain on the course of the nerve in response to pressure.

Two cases of facial neuralgia which have recently come under my notice I will quote as being of general interest. The first, a hard painful growth on the lower maxillary which had caused great suffering for more than a fortnight, was treated by the sufferer (herself a masseuse). Determined to ascertain whether the congestion could be relieved by increasing the flow of blood to the tissues, and to endeavour to remove the growth by grinding away, she subjected the tender part to active pressure movements for twenty minutes. The immediate result was far from pleasant, but after twenty minutes' rest the pain was greatly relieved, and by the next morning the growth which had disfigured her for a fortnight had entirely disappeared. Emboldened by this success, when some months later she experienced great suffering from acute neuralgia in an upper molar, she repeated the experiment. There being no abnormal growth on this occasion to grind away, circular friction was used for ten minutes as a counter-irritant on a higher branch of the same nerve and gave almost instant and perfect relief. It needed some little courage to try these experiments on herself, but she had the courage of her convictions.

Rheumatism.—Chiefly due to impoverished state of the blood and defective assimilation, but may also follow muscular wasting, and be considered a mild and early stage of locomotor ataxy. I recently treated a case in which crutches had

been used for four years. Both knee joints were rigid, and I was told with a melancholy smile that it was beyond my power to make the crutches unnecessary. But I did! and this is how it was accomplished. After using hot fomentations (see sprained ankle), I rubbed the entire limb and the knee especially with the following liniment:—

½ pint good brown vinegar.
1 oz. spirits of turpentine.
¼ oz. spirits of wine.
¼ oz. spirits of camphor.
1 raw egg well beaten.

Mix and beat all the ingredients thoroughly together for ten minutes. The liniment is ready for use in half-an-hour. Bottle it and keep well corked. It may be applied three or four times a day. The hip, knee, ankle, and toes all seemed immovable. After four days of patient massage, I found on taking the ankle in my hand that the knee was yielding. I continued to devote my principal attention to the knee joint for a few days, using by gentle degrees extension and flexion movements for ten minutes each time. I then placed the patient in a chair, rested the foot on another, and sat on the knee, rising and sitting very cautiously and gently several times, after which I once more took the ankle in my hand and flexed it as far back towards the buttock as possible without causing pain. The result at the end of one week far exceeded my expectations and astounded the patient. After this all went slowly but surely to complete restoration

It will, of course, be understood that I gave my earliest attention to the knee joint, that I might be enabled to exercise the hip more freely. I aimed also at effecting a perfect cure without extracting one groan from the patient, in which I succeeded. The painful wrenching of stiff hips, of which we hear, is quite unnecessary. It simply requires a little time to treat as I have described. Rheumatic ankles and other joints may be similarly treated.

Chapter XXI.

GOUT, DIABETES AND DROPSY.

Gout and Diabetes.—"From errors in diet, want of exercise, or imperfect work of the kidneys, the food becomes imperfectly assimilated. An excess of uric acid accumulates in the blood and disturbs and oppresses the various organs of the body. Nature, or the organic force, reacts to expel this poison and deposits the uric acid as urate of soda upon the structures of the joints and tendons which have the least complex structure and whose chemical activity is stronger than the organic" (Kidd). If the liver cells be exhausted by continued over-stimulation, the metabolism of nitrogenous food will be effected with great difficulty. The uric acid will be formed in excess and must be eliminated, or it will circulate as a poison in the blood and as an irritant to the nervous system. A regular and ample supply of blood is an absolute necessity to functional activity (Fig. 61), and the blood supply is dependent on tissue activity, which latter is eminently effected by massage combined with appropriate dietary and sometimes faradisation. The phenomena of gout will also apply to diabetes (in which excess of sugar is secreted through imperfect metabolism), rheumatism, or rheumatic gout, dyspepsia, cardiac irregularity, etc. Massage of the spine and back generally is of the utmost

importance in these complaints, spinal congestion being very often present in nutritional defects and functional derangements. Let the treatment commence at the earliest possible stage. Manipulate in the prescribed way all the affected parts.

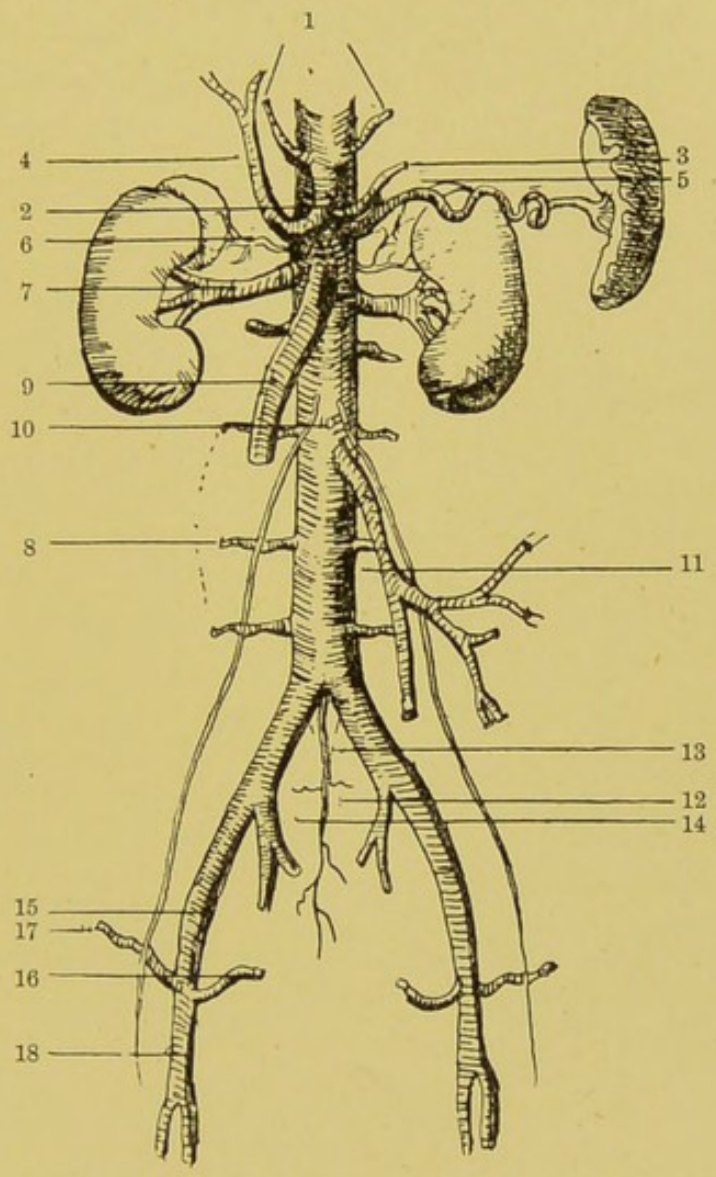

FIG. 61.—THE ABDOMINAL AORTA WITH ITS BRANCHES.—1, the phrenic arteries. 2, the cœliac axis. 3, the gastric artery. 4, the hepatic artery. 5, the splenic artery, passing outwards to the spleen. 6, the supra-renal artery. 7, the right renal artery, passing outwards to right kidney. 8, the lumbar arteries. 9, superior mesenteric artery. 10, the two spermatic arteries. 11, the inferior mesenteric artery. 12, the sacra media. 13, the common iliacs. 14, internal iliac of right side. 15, external iliac artery. 16, epigastric artery. 17, circumflexailii artery. 18, the femoral artery.

Let plenty of exercise be taken in case of diabetes.

Dropsy.—Dropsy is an accumulation of fluid in the subcutaneous cellular tissue, caused by the

inability of the lymphatics to take up the quantity of fluid which the blood-vessels pour out. This inability is generally due to paralysis of the walls of the capillary vessels, or it may be from abnormal venous pressure, which destroys the balance between the arterial and venous systems, or it may be that the blood is of very poor quality, causing want of tone in the walls of the blood-vessels and making transudation easy. This want of tone is frequently the cause of dropsy after a severe or tedious illness, and is most apt to appear in the lower extremities. The object of massage in this disease is to cause counter-pressure, stimulating the circulation through the veins, the lymphatics (causing increased absorption), the skin, the kidneys, and bowels.

Use general and local massage as directed. Let the manipulations be most cautious and gentle, effleurage principally. Gradually increase treatment until you work for one hour in the morning and same at night. Faradise the weakened muscles once daily. The free action of the bowels and kidneys must be attended to. To perfect a cure may take from two to six months. A good tonic should be taken to improve the quality of the blood and brace the walls of the vessels.

Chapter XXII.

VARICOSE VEINS AND CONSTIPATION.

Varicose veins.—These are due to inefficient action of the valves of the veins which give way under venous pressure and dilatation and varicosity result. (The peculiar throbbing of various vessels which may be occasionally felt is due to this weakness of the muscular valves.) They may also be caused by constant pressure of tight garters, from constantly standing, or from internal congestions, and are both painful and troublesome; moreover, there is the possibility of the rupture of large varicose veins and sudden, fatal hæmorrhage. Elastic stockings and bandages, though they may serve to support the general tenderness of the limb, obviously cannot aid in dispersing the congested blood or clots, rather the reverse.

The natural treatment seems plainly to suggest itself, *i.e.*, dispersing the congested blood, and by strengthening the weakened walls of the vessels with a fresh supply of oxidised blood, aid them to resume their active powers.

For treatment, support the limb with the left hand. With the right *gently* effleurage the affected part, follow by centripetal strokings, repeat these movements above and below the congested region,

conclude with ordinary frictions and exercise of the extremities.

Constipation.—This complaint is very prevalent and at the root of many functional troubles. It may be caused by deficiency of bile, or of healthy blood. The cæcum, from its structure, is more likely to be the seat of obstruction than any other part of the large bowel. "Chronic constipation," says Schrieber, "offers the most signal successes to mechanotherapy, for it is possible to make direct mechanical pressure upon the cœliac and hypogastric plexuses, and through these to reflexly excite peristalsis; furthermore, the vasomotor nerves and the intestinal muscular fibres are directly stimulated by the squeezing to which they can be subjected."

Purgation, though of temporary benefit, frequently causes worse subsequent consequences. Massage has proved itself the best and safest regulator. Before treating, ascertain if there be any abnormal growth, obstruction, or tender spot. Having satisfied yourself on these points, see that the bladder is empty (a most important point before manipulating at any time), then thoroughly lubricate the abdomen. Should the patient be very stout, place a pillow, or two, under the thighs to relax the abdominal muscles. Then proceed with the massage movements described in the chapter on the abdomen. It is also advisable to masse the entire back and buttocks as directed. A glass of stout may with advantage be taken the last thing at night; accustom the bowels to move the first thing in the morning or immediately after breakfast. Avoid heating foods and use plenty of sound fruit, tomatoes, etc.

Chapter XXIII.

PARALYSIS AND WRITERS' CRAMP.

Paralysis.—Various stages of paralysis or progressive muscular atrophy, which have until recently been considered incurable, have yielded in an almost marvellous manner to systematic massage and electricity, which arrest the degeneration of nerve and muscle generally caused by defective nutrition, sometimes arising from cold, disease, poison, dipsomania, hysteria, diabetes, diphtheria, etc.

Wasted condition of the muscles from disuse will come under this category. I will quote a case in point. I was requested to visit an hospital at some distance from London, where I found a girl (sixteen) with paralysis of two years' standing which commenced after an attack of diphtheria. The lower extremities, from knees to toes, were of a dark-purple colour and had all the appearance of mortification. There was total want of sensation. I adopted the following treatment with splendid results. Standing at the foot, facing her, I commenced claquement (spanking) with both hands (exerting all my strength, which is considerable) over the entire limb, not allowing an inch to escape. Then followed deep vibrations, sciage, and rolling up. I afterwards manipulated the rest of the body more leniently, and concluded with twenty minutes' dosage of electricity, placing

one electrode on the sciatic and crural nerves alternately and with the other following the branches of those nerves and every muscle from hip to heel. I then faradised the trunk, placing one electrode at the nape of the neck and working well over the spine and upper extremities to the finger tips. I requested the nurse to repeat the treatment in the evening and morning before I arrived. On the third day a marked improvement had taken place. The leaden appearance of the limbs had altered to a deep red, the muscles responded to the electric current. The daily improvement after this was quite perceptible. On the sixth day the limbs were pink and the warmth of

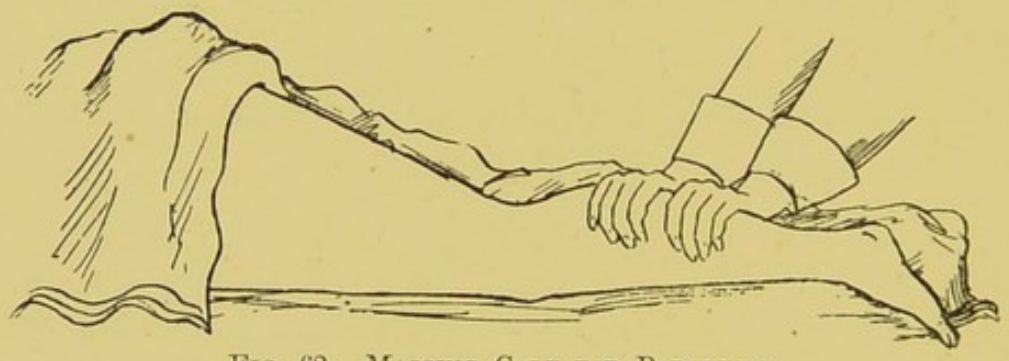

Fig. 62.—Massing Calf for Paralysis.

my hand was felt. About the eighth day passive gymnastics were commenced, which up to that time would have been useless. For a milder case I should do first the ordinary movements as described for hygienic massage of the leg, followed by quick and very firm friction, both hands working alternately, over the gastrocnemius M. from heel to knee (Fig. 62), followed by deep vibrations, sciage, and (especially) claquement over the entire limb. Extend the thumb and fingers and press up the muscle vigorously towards the knee. Always conclude with claquement and rolling up (Fig. 63).

Thoroughly knead the muscles lying behind the

patella. Reason will point out that the upper limbs, if affected, must be treated similarly.

Writers' cramp, or *Scriveners' palsy.*—This, as its name indicates, affects those who write very constantly, producing, first, fatigue of the hand, especially of the thumb and first two fingers, then follows tremor, gradually increasing in area, until, perhaps, the wrist and even the entire arm is involved and painful when touched, especially over the larger nerves.

Those who follow any occupation in which there

FIG. 63.—OUTWARD RUBBING FOR PARALYSIS.

is a constant strain on the muscles of the hand, as, for instance, painters, telegraphists, musicians, etc., are liable to this cramp, but writers especially, and as it is usually those who depend on scrivenry as a livelihood, who write to such excess, it is particularly deplorable. The cause we may conclude is, that the nerves and muscles called into action cannot absorb sufficient nutrition to meet the extraordinary demands made on them. Rest, massage, and judicious application of electricity can do much to repair the mischief. One very important point is, that the treatment should commence as early as possible. I first

apply hot fomentations (see chapter on sprains). Thoroughly knead all the muscles of the hand with the ball of your thumb and fingers. Then give deep pressions on the palm (Fig. 64), followed by massage of the forearm; holding the hand palm upwards in your left, oil your thumb and friction rapidly from

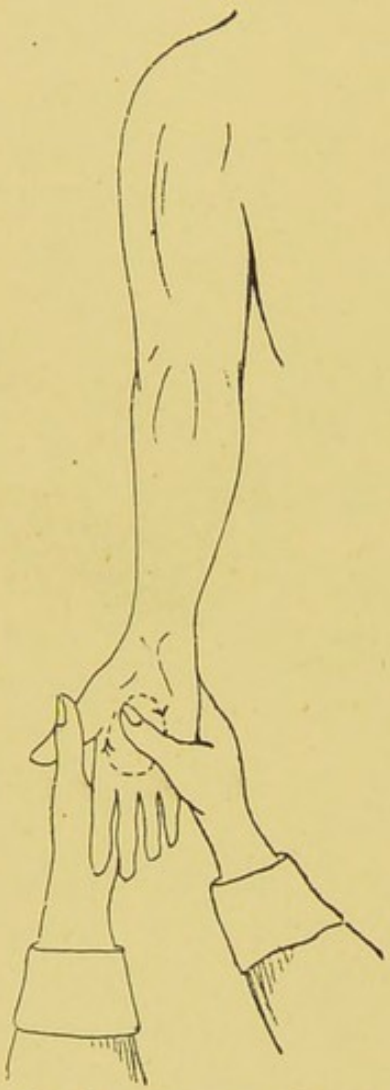

Fig. 64.—Writers' Cramp.

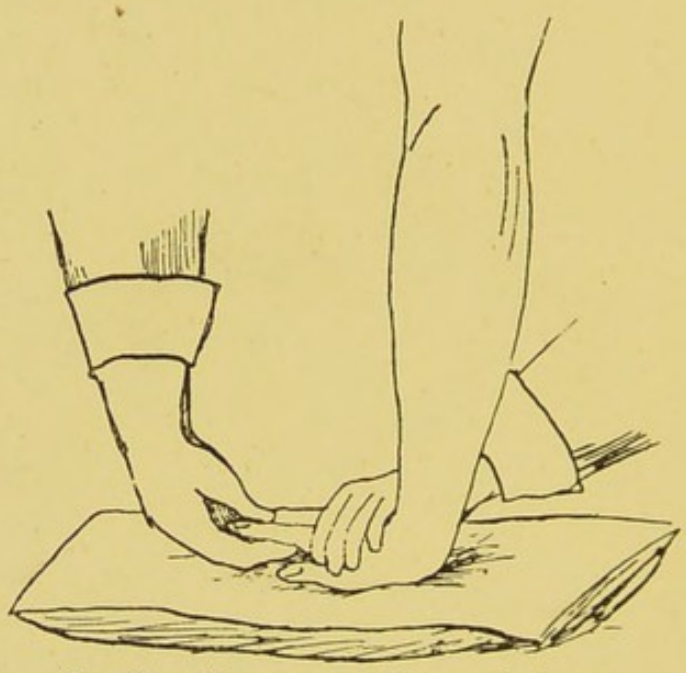

Fig. 65.—Massing for Writers' Cramp.

wrist to elbow, followed by kneading of the forearm and elbow joint and rolling the biceps. Next place the hand on a pillow, palm downwards (Fig. 65), and covering the metacarpal joints firmly with the left hand rub the thumb and fingers separately, bearing in mind that the principal object in view in the

manipulation is, to thoroughly extend all the flexor muscles of the palm. Exercise the entire limb and every joint from the shoulder to the ungual extremities. Conclude with claquement and rolling up. Masse the limb, the head, and spine for twenty minutes, twice a day for first fortnight, after that, once daily.

Chapter XXIV.

SPINAL IRRITATION, CLERGYMAN'S THROAT, THROAT DEAFNESS, DEAFNESS.

Spinal irritation.—Massage of the spine is of the greatest importance, seeing that the vertebral column is attached to all other parts of the body, is the seat of the central nervous system, and forms a support for the principal abdominal and thoracic organs. In cases of neuralgia, lumbago, rheumatism, hysteria, paralysis, etc., etc., it is of the utmost importance that the spine should receive constant treatment. In a former chapter will be found the manipulations suitable to the spine.

Clergyman's throat.—This complaint is very prevalent and distressing to speakers, lecturers, teachers, preachers, and others, and arises from an overtaxed condition of the larynx and vocal cords.

During my lengthy experience I have treated very many of these cases, and have formed the opinion that the majority of sufferers are to be found amongst those who wear spectacles, from the fact, I presume, of raising their chins abnormally to focus the eye to the glasses, in this act straining the muscles of the throat. It is to be remarked that, as a rule, clergymen while preaching place their hands on the pulpit,

and although considerably above their audience, raise the chin, which position, together with the effort of making a long speech, must fatigue and distress the muscles of the throat, and at the same time throw the head back with abnormal strain on the rectus capitis, constrictor muscles of the pharynx, and occipitalis, which sometimes creates a faint singing in the ears and a feeling of fulness on the brain. Those who look over their spectacles while speaking I have found singularly exempt from throat weakness. In addition to the massage of the throat elsewhere described, and also the movements which come under the heading of "throat deafness," I can recommend homœopathic tinctures of mercury and belladonna for bracing the throat; also sipping a weak solution of chili-vinegar (half-a-teaspoonful to half-tumbler of water) before and during speaking.

Throat deafness.—The patient lying on the back, turn the face towards the right and with the pulp of the first and second fingers give repeated pressions from behind the ear to the larynx and thyroid cartilage, following the direction of the sterno-mastoid muscle. Turn the face towards the left and repeat on the right side. Then stroke repeatedly with thumb and fingers on either side of the trachea from the hyoid bone to the sterno-thyroid muscle. An excellent gymnastic massage of the larynx (recommended by Dr. Stretch Dowse for throat deafness) consists of placing the thumbs at the lower border of the thyroid cartilage, asking the patient to swallow; in the act of swallowing the larynx is raised, the thumbs follow it as it ascends, and when it can go no higher (Fig. 66), fix it in that position. Then the patient again endeavours to swallow and the effort

clears the eustachian tube and greatly improves the hearing.

Deafness.—I quote the following interesting cure of deafness, although it certainly was not due to massage, but may prove useful to some of my readers and I promised my friend I would quote it. A lady (over sixty) who had been almost stone deaf for five years was advised to try the following remedy. Mix equal parts of goose oil and spirits of ammonia, apply

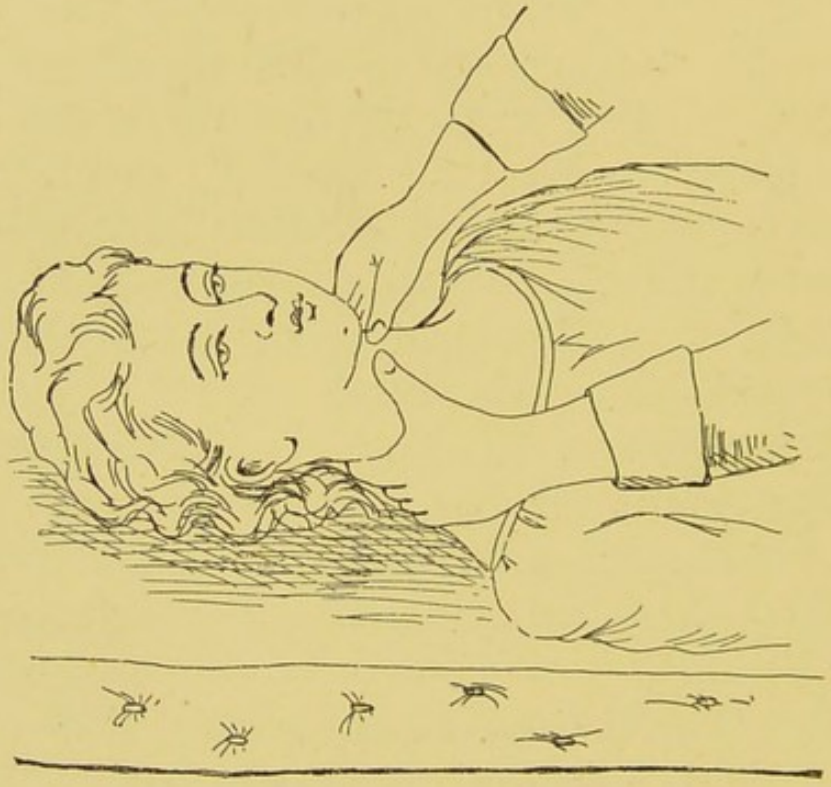

Fig. 66.—Massage for Throat Deafness.

three times a day between the eyes, on the bridge of the nose, behind the ears, and on the nape of the neck. Syringe the ears every other day with tepid water and a little glycerine. Several times during the day shut the mouth, hold the nose, and endeavour to blow through the ears. She tried this for a fortnight, at the end of which time an accumulation of wax, as hard as wood, came from the ears, and the hearing was perfectly restored.

The goose oil may be obtained from the poulterers (6d. per pound); it is from the white pure fat of the interior. Place a little in an enamelled saucepan and *simmer* for ten minutes. Add an equal part of spirits of ammonia, and mix. It will keep in a wide-necked jar if well corked.

Chapter XXV.

HOUSEMAID'S KNEE (SYNOVITIS), SPRAINS.

Housemaid's knee.—This is an accumulation of serous fluid between the integument and front of the patella. It causes much swelling, pain, and tenderness. I find it very prevalent among nurses through constantly pressing the knee against bedsteads when on duty. Housemaids are also sufferers through constantly kneeling on stone floors, etc., when scrubbing, and also from thoughtlessly shutting drawers with the knee. Cooks also suffer through being constantly subject to abnormal heat, which causes inflammation of the tissues and transudation of serous fluid. Oil the palm of the right hand and make it concave to accommodate the roundness of the patella. Friction for ten minutes (centrifugal movement) with each hand alternately. Then place the left hand so as to support the thigh, and with the right hand clenched and the wrist kept low make a circle of careful punctations with the ball of the thumb (not the tip) round the outer edge of the patella. Then raise the calf slightly with the right hand and with the left effleurage gently and thoroughly under the knee joint. I quite restored an exceptionally bad knee in a fortnight by this simple treatment, the patient resting during that time.

Sprains.—"The more movable a joint the more liable it is to dislocation." The wrist and ankle are most liable to sprains, the shoulder and hip to dislocation. In treating a sprained ankle, which is extremely tender, handle firmly and cautiously. You cannot avoid causing some pain, but let it be the least possible. Place the foot in a bath of hot water with a little turpentine. Apply hot fomentations to calf and knee for ten minutes. Then quickly dry the limb and friction for twenty minutes, rubbing

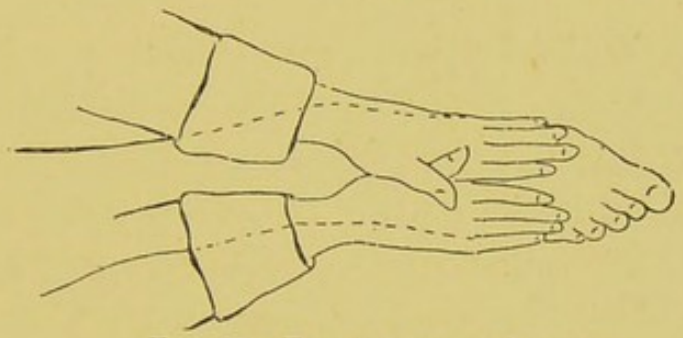

FIG. 67.—EFFLEURAGE OF INSTEP.

in neat's foot oil and brandy. See Fig. 67 for effleurage of instep. Then separate the fingers and effleurage thoroughly over and round the malleoli, afterwards well kneading the sole of the foot with the balls of thumbs and fingers; finally exercise as shown in Fig. 17. This will quickly repair a very bad sprain. I generally allow three days for the swelling to subside and for bandaging, before commencing the above treatment. In exercising extend before you flex, it causes less pain. When the inflammation is quite reduced, faradise daily.

Chapter XXVI.

MASSAGE FOR CHILDREN, FARADISM.

Massage for children.--Massage for a quarter of an hour night and morning is more beneficial than the majority of tonics, helping to build up a healthy muscular framework and greatly assisting in those processes of paramount importance to child life—assimilation and nutrition. It is not at all advisable that the brain activity of a child should be largely stimulated. If it is, it will certainly be at the expense of its physical development, and irritability, convulsions, or premature death the probable results.

Judicious dietary is most important, and it is well worth while for an intelligent parent to ascertain the nature and property of the various kinds of food, seeing that they are so classified by nature (if we will but take the trouble to select them) as to feed and nourish all the tissues, and build up a sound, muscular, and bony framework, which will assist their fortunate owner in future years to buffet the world free at least from physical disability, leaving them leisure to use their energies to better advantage than the perpetual groaning over infirmities. If mothers, as a rule, would pay more attention to judicious frame and blood feeding for their children, and less attention to their external adornment, it would be showing them truer kindness.

This is where I find by experience that Scotch and Irish mothers, in humble life, give English ones a lesson. They feed their children up to twelve or thirteen years of age on milk, oatmeal, pulse, and very little else except fresh air, and the fine brawny sons and daughters these poor mothers are able to send to all parts of the world should excite our English envy.

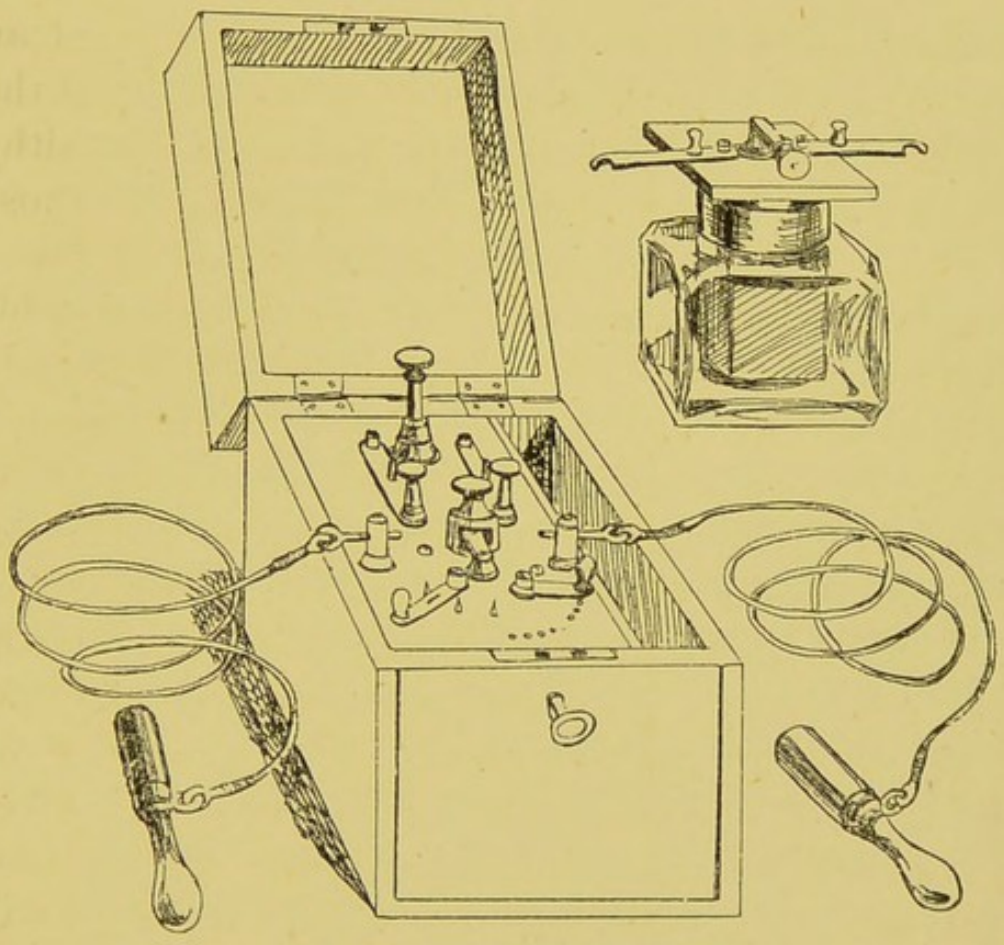

Fig. 68.—Faradic Battery.

Faradism.—The battery I generally use, and recommend (see Fig. 68), is small, portable, convenient, and quite powerful enough in the generality of cases. Unscrew the nuts at the side of the piston and turn the bars from under them, take out the back part of the battery and turn the lid round till it comes off.

A little more than half-fill the bottle with a solution of chromic acid, replace the cover and battery, turn back the brass bars and screw the nuts down tightly, but not too tightly. Should these nuts be either too tightly or too loosely screwed, it may prevent the free action of the current. Insert the connecting wires in the clamps, push down the piston and the current is established. The force is increased or diminished by turning the lever to right or left. When no longer required, draw up the piston and fold it down at the hinge. All the parts should be carefully dried and polished before putting away, as any accumulation of dust or damp will interrupt the current. When the action of the battery becomes feeble, the solution must be thrown away, the bottle rinsed and freshly filled. Never add new to stale solution. An electrode is the term applied to any material which is fixed at the end of the conducting wire, by which the current is made to enter any part of the human body. There are various kinds of electrodes. There is the brush usually made of nickelised copper wire and of various sizes. Two ordinary electrodes are wooden handles to which are attached brass cups. In these cups are placed pieces of sponge which have been previously wetted in salt water. This is called a wet electrode. Another is made of a piece of zinc covered with chamois leather, the size varying according to what part of the body they are to be used for. There are also sharp or blunt steel or platinum needles for fibroid tumours, and special electrodes for treatment of the larynx, bladder, vagina, uterus, etc.

This faradic, or induced current, may also be used in combination with the galvanic current. The former acts principally upon the nerves, stimulating them by

vibration and percussion. The latter principally affects the muscular tissue. The weaker the nerve or muscle, the milder the current applied must be, as to over-stimulate a degenerate nerve is to destroy it. As a rule, mild currents are preferable. Time of application should vary from five to fifteen minutes. See that moist electrodes remain moist. The current applied to the head and neck must be far milder than that applied to the trunk. The extremities are the least sensitive. The wire brush is especially useful in cases of anæsthesia and hysterical paralysis.

Chapter XXVII.

GENERAL REMARKS.

I quote a few quaint ideas concerning massage. "Madam! will you be good enough to inform me if massage and electricity can be taught by correspondence, and if so, how long would the course take and what your fee?" My reply: "You might as well attempt to convey a sigh in a letter". Again, a doctor teaches a nurse the "art of massage" on a pillow! Another opinion: "You must go to Germany for two years to be properly taught". (Result, I get that very pupil to teach over again.) Another: "A woman of ordinary intellect can learn massage in a day". (The doctor taught her himself *in a day!* She left her first patient an animated bruise.) Another questioner: "Is not massage a thing that takes it out of one terribly?" "No, not as I teach it." "But is it not a sort of mesmerism?"

A masseuse at a fashionable watering-place, who bruises her patients terribly, is accredited with being "a clever masseuse, as she brings the *bad blood to the surface*"! When I hear such things I always regret that poor sufferers are perhaps not aware that a bruise *is never* given by a skilful and properly trained masseuse. Massage must be most cautiously used after sprains, etc., also in treating varicose veins for fear of causing hæmorrhage. It must not be

employed at all where the skin is abraded, or for wounds and tumours, neither during pregnancy, and manipulate the limbs only during menstruation. Do not, at the commencement of the treatment, insist on employing movements which seem particularly objectionable to the patient; but in a day or two, when more confidence has been established, gradually introduce all the movements desirable. The temperature of the room should always be not less than 75° Fahr.; see that the feet are warm before leaving the patient. Do not masse within two hours after a meal, and let there be an hour's rest after treatment. Massage counteracts the craving for stimulants and sedatives. It is of the greatest benefit to women at the critical "change of life"; also to the aged, keeping the tissues nourished and muscles and joints supple. It certainly restores an appearance of comparative youth, and by increasing the secretions prevents the joints becoming dry and stiff. Experience seems to prove that regular massage in advancing age prolongs life.

THE END.

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