

A short description of the human muscles, chiefly as they appear on dissection. Together with their several uses, and the synonyma of the best authors / [John Innes].

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For

29,965/A

M^r W^m Anderson

Surgeon, from his
friend and humble
serv^t John Innes

A
SHORT DESCRIPTION
OF THE
HUMAN MUSCLES,

Chiefly as they appear on DISSECTION.

Together with their several USES, and the
SYNONYMA of the best AUTHORS.

By JOHN INNES.

EDINBURGH:

Printed by BALFOUR and SMELLIE:

FOR

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M, DCC, LXXVI.

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ALEXANDER MONRO D.

Professor of Anatomy and Medicine
in the University of Edinburgh.

SIR,

HAVING been repeatedly solicited

for several years past by many of your

Peers, to publish a Description

of the Muscles, as they appear upon

Dissection of the Human Body, I have

at last ventured to comply with their

request. Your anxiety to promote the

Science of Anatomy, and to encourage

every thing that may be useful to the

Gentlemen who attend your Lectures

was the principal motive which suggested

me.



(T O)

ALEXANDER MONRO, M.D.

PROFESSOR of ANATOMY and MEDICINE
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me to undertake this attempt. I have no knowledge of the subject but what I derived from you. If, therefore, this Treatise, which you have never seen till I now present it to you, should communicate any advantage to the Gentlemen under your care, it is to you alone they are indebted for the obligation. I am,

S I R,

With respect,

Gratitude, and esteem,

Your much obliged,

And very humble servant,

JOHN INNES.

ADVERTISEMENT.

SEVERAL full and accurate descriptions of the Muscles have already been published. But their size and prolixity have rendered them of less value to the dissector than the small treatise of Dr Douglas, which was first published about the beginning of this century, and, since that time, has undergone various impressions, without receiving any improvement, excepting the addition of the synonyma from Albinus. It is therefore presumed, that a simple and concise description of the muscles, which should contain all the improvements of the moderns, is still wanting.

To class the muscles according to their uses, may do very well in a large work, or
in

in describing their compound actions. But this method can never answer the purposes of dissection. To remedy this inconvenience, the muscles, in the following treatise, are described chiefly as they appear in dissecting the human body.

The describing of the muscles according to their *origins* and *insertions*, prevents much circumlocution. This is the method pursued by Dr Douglas ; and, wherever his descriptions seemed tolerably accurate, they have been copied with little alteration. But Dr Douglas's book is peculiarly defective with regard to the muscles of the back and neck ; in describing these, therefore, the method of Albinus has been nearly followed.

Those who have not opportunity, or are averse from undergoing the labour of dissecting, may derive considerable advantages
from

from comparing the descriptions now given with the beautiful and correct tables of Albinus.

For the benefit of those who wish to examine the history of the muscles more minutely, the synonyma of the best authors are added ; and, for the sake of brevity, the compound action of the muscles, and the origin and insertion of several inconsiderable fibres are omitted.

The reader will observe, that, in general, the muscles of one side only are described ; because all the muscles of the body, with very few exceptions, have correspondent ones on the opposite side.

If this attempt should be found useful, it will encourage the author to give a concise view of all the other parts of the human body.

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A

D E S C R I P T I O N
O F T H E
H U M A N M U S C L E S.

C H A P. I.

Of the Muscles of the Teguments of the Cranium.

THE Skin that covers the cranium is moved by a single broad digastric muscle, and one small pair.

I. OCCIPITO-FRONTALIS,

Arises fleshy from the transverse protuberant ridge near the middle of the os occipitis laterally, where it joins with the temporal bone; and tendinous from the rest of that ridge backwards, opposite to the lateral fi-

A

nus;

2 DESCRIPTION OF

nus ; it arises after the same manner on the other side : From thence it comes straight forwards, by a broad thin tendon which covers the upper part of the cranium at each side, as low down as the attollens aurem, to which it is connected, as also to the zygoma, and covers a part of the aponeurosis of the temporal muscle ; when it comes as far forwards as near the hair of the front, it becomes fleshy, and descends with straight fibres.

Inserted into the orbicularis palpebrarum of each side, and into the skin of the eye-brows, sending down a fleshy slip between them, as far as the compressor naris and levator labii superioris alaeque nasi.

Use. Pulls the skin of the head backwards, raises the eye-brows upwards, and, at the same time, it draws up, and wrinkles the skin of the fore-head.

Epicranius, Alb.

Frontalis et occipitalis, Winll.

2. CORRUGATOR SUPERCILII,

Arises fleshy from the internal angular process of the os frontis, above the joining
of

of the os nasi, and nasal process of the superior maxillary bone; from thence it runs outwards, and a little upwards.

Inserted into the inner and inferior fleshy part of the occipito-frontalis muscle, where it joins with the orbicularis palpebrarum, and extends outwards as far as the middle of the orbit.

Use. To draw the eye-brow of that side towards the other, and make it project over the inner canthus of the eye: When both act, they pull down the skin of the forehead, and make it wrinkle, particularly between the eye-brows.

Musculus Supercilii, Winsl.

Musculus Frontalis verus, seu Corrugator, Dougl.

C H A P. II.

Of the Muscles of the Ear.

THE Muscles of the ear may be divided into three classes, viz. the Common, Proper, and Internal. The *Common* may move the whole ear; the *proper* only affect the particular parts to which they are connected; and the *internal*, the small bones within the tympanum.

The common muscles are,

I. ATTOLLENS AUREM,

Arises thin, broad, and tendinous, from the tendon of the occipito-frontalis, from which it is almost inseparable, where it covers the aponeurosis of the temporal muscle.

Inserted into the upper part of the ear, opposite to the antihelix.

Use.

Use. To draw the ear upwards, and make the parts into which it is inserted tense.

Superior auris. Winsl.

2. ANTERIOR AURIS,

Arises thin and membranous near the posterior part of the zygoma.

Inserted into a small eminence of the helix, opposite to the concha.

Use. To draw this eminence a little forwards, and upwards.

3. RETRAHENTES AURIS,

Arise, sometimes by three, but always by two distinct small muscles, from the external and posterior part of the mastoid process, immediately above the insertion of the sterno-cleido-mastoid muscle.

Inserted into that part of the back of the ear which is opposite to the septum that divides the scapha and concha.

Use.

6 DESCRIPTION OF

Use. To draw the ear back, and stretch the concha.

Posterior auris, Winsl.

The proper muscles are,

1. HELICIS MAJOR,

Arises from the upper and acute part of the helix anteriorly.

Inserted into its cartilage a little above the tragus.

Use. To depress that part from which it arises a little downwards and forwards.

2. HELICIS MINOR,

Arises from the inferior part of the helix.

Inserted into the crus of the helix, near the fissure in the cartilage opposite to the concha.

Use. To contract the fissure.

3. TRAGICUS,

Arises from the middle and outer part of the concha, at the root of the tragus, along which it runs.

In-

Inserted into the point of the tragus.

Use. Pulls the point of the tragus a little forwards.

4. ANTITRAGICUS,

Arises from the internal part of the cartilage that supports the antitragus, and, running upwards, is

Inserted into the tip of the antitragus, as far as the inferior part of the antihelix, where there is a fissure in the cartilage.

Use. Turns the tip of the antitragus a little outwards, and depresses the extremity of the antihelix towards it.

5. TRANSVERSUS AURIS,

Arises from the prominent part of the concha on the dorsum of the ear; the fibres not so fleshy as in the former.

Inserted opposite to the outer side of the antihelix.

Use. Draws the parts to which it is connected towards each other, and stretches the scapha and concha.

The

8 DESCRIPTION OF

The muscles of the Internal ear are three :

I. LAXATOR TYMPANI,

Arises by a small beginning from the extremity of the spinous process of the sphenoid bone, behind the entry of the artery of the dura mater ; then running backwards, and a little upwards, along with the chorda tympani of the lingual branch of the inferior maxillary nerve, in a fissure of the os temporis near the fossa that lodges the condyle of the lower jaw.

Inserted into the long process of the malleus, within the tympanum, where it rests upon the edge of the fissure between the pars squamosa and petrosa,

Use. To draw the malleus forwards, towards its origin, consequently the membrana tympani, by which it is relaxed.

Externus Mallei, Alb.

Anterior Mallei, Winfl.

2. TENSOR TYMPANI,

Arises, by a very small beginning, from the cartilaginous extremity of the Eustachian tube, just where it begins to be covered by the pars petrosa, and spinous process of the sphenoid bone, near the entry of the artery of the dura mater; from thence running backwards near the osseous part of the Eustachian tube, forms a very distinct fleshy belly, below a thin osseous plate, between the pars squamosa and labyrinth; and sends off a slender tendon, which makes a turn into the tympanum along with the nerve called chorda tympani.

Inserted into the posterior part of the small process of the malleus, near where it is connected to the membrana tympani.

Use. To pull the malleus and membrana tympani inwards towards the pars petrosa, by which the membrane is made tense.

Internus mallei, Winsl.

Internus auris, Dougl.

3. STAPEDIUS,

Arises, by a small fleshy belly, from a little cavern in the pars petrosa, near the cells of the mastoid process, before the inferior part of the passage for the portio dura of the auditory nerve; its tendon passes straight through a small round hole in the same cavern, enters the anterior part of the tympanum, and is

Inserted into the posterior part of the head of the stapes.

Use. To draw the stapes obliquely upwards towards the cavern, by which the posterior part of its base is moved inwards, and the anterior part outwards.

Musculus stapedis, Winsl.

Stapidaeus, Dougl.

CHAP. III.

Of the Muscles of the Eye-lids.

THE palpebrae, or eye-lids, have one muscle common to both, and the upper eye-lid one proper to itself.

I. ORBICULARIS PALPEBRARUM,

Arises, by a number of fleshy fibres, from the outer edge of the orbital process of the superior maxillary bone, and from a tendon near the inner angle of the eye; these run a little downwards, then outwards, over the upper part of the cheek, below the orbit, covering the under eye-lid, and surround the external angle, being loosely connected only to the skin and fat, run over the superciliary ridge of the os frontis, towards the inner canthus, where they intermix with those

those of the occipito-frontalis and corrugator supercilii; then covering the upper eye-lid, descend to the inner angle opposite to the inferior origin of this muscle, firmly adhering to the internal angular process of the os frontis, and to the short round tendon which serves to fix the palpebrae and muscular fibres arising from it.

Inserted, by the short round tendon, into the nasal process of the superior maxillary bone, covering the anterior and upper part of the lachrymal sac; which tendon can be easily felt at the inner canthus of the eye.

Use. To shut the eye, by drawing both lids close together, the fibres contracting from the outer angle towards the inner, press the eye-ball, squeeze the lachrymal gland, and convey the tears towards the puncta lachrymalia.

The *ciliaris* of some authors is only a part of this muscle covering the cartilages of the eye-lids, called *cilia* or *tarfi*.

There is often a small fleshy slip which runs down from the outer and inferior part
of

of this muscle above the zygomaticus minor, and joins with the levator labii superioris alaeque nasi.

2. LEVATOR PALPEBRAE SUPERIORIS,

Arises from the upper part of the foramen opticum of the sphenoid bone, thro' which the optic nerve passes, above the levator oculi, near the trochlearis muscle.

Inserted by a broad thin tendon into the cartilage that supports the upper eye-lid, named *tarsus*.

Use. To open the eye, by drawing the eye-lid upwards, which it does completely, by being fixed to the tarsus, pulling it below the eye-brow, and within the orbit.

Aperiens palpebram rectus, Dougl.

C H A P. IV.

Of the Muscles of the Eye-Ball.

THE muscles which move the globe of the eye are six, viz.

Four *straight* and two *oblique*.

The four straight muscles very much resemble each other ; all

Arising by a narrow beginning, a little tendinous and fleshy, from the bottom of the orbit around the foramen opticum of the sphenoid bone, where the optic nerve enters, so that they may be taken out adhering to this nerve, and all having strong fleshy bellies.

Inserted at the forepart of the globe of the eye into the anterior part of the tunica sclerotica, and under the tunica adnata, at opposite sides, which indicates both their names and *Use* ; so that they scarcely require any fur-

further description, but to name them singly.

1. LEVATOR OCULI,

Arises from the upper part of the foramen opticum of the sphenoid bone, below the levator palpebrae superioris, and runs forwards to be

Inserted into the superior and forepart of the tunica sclerotica, by a broad thin tendon.

Use. To raise up the globe of the eye.

Attollens, Alb.

Elevator, Dougl.

2. DEPRESSOR OCULI,

Arises from the inferior part of the foramen opticum.

Inserted opposite to the former.

Use. To pull the globe of the eye down.

Deprimens, Alb.

3. AD-

3. ADDUCTOR OCULI,

Arises, as the former, between the obliquus superior and depressor, being, from its situation, the shortest.

Inserted opposite to the inner angle.

Use. To turn the eye towards the nose.

4. ABDUCTOR OCULI,

Arises from the bony partition between the foramen opticum and lacerum, being the longest from its situation, is

Inserted into the globe opposite to the outer canthus.

Use. To move the globe outwards.

The oblique muscles are two :

1. OBLIQUUS SUPERIOR, seu TROCHLEARIS,

Arises, like the straight muscles, from the edge of the foramen opticum at the bottom of the orbit, between the levator and adduc-

adductor oculi; from thence runs straight along the pars plena of the ethmoid bone, to the upper part of the orbit, where a cartilaginous trochlea is fixed to the inside of the internal angular process of the os frontis, through which its tendon passes, and runs a little downwards and outwards.

Inserted, by a broad thin tendon, into the tunica sclerotica, a little beyond the insertion of the attollens oculi.

Use. To roll the globe of the eye, and to turn the pupil downwards and outwards, so that the upper side of the globe is turned inwards, and the inferior part to the outside of the orbit, and the whole globe drawn forwards towards the inner canthus.

Obliquus major, Winsl.

2. OBLIQUUS INFERIOR,

Arises, by a narrow beginning, from the outer edge of the orbitar process of the superior maxillary bone, near its juncture with the os unguis, and running obliquely outwards, is

Inserted into the sclerotica, in the space between the abductor and optic nerve, by a broad thin tendon.

Use. To draw the globe of the eye forwards, and inwards, and, contrary to the superior, to turn the pupil upwards; so that the external part of the globe is turned towards the inferior side, the internal rolls in the upper part; and the rotation is directed towards the extremity of the eye-brow.

Obliquus minor, Winsl.

CHAP.

C H A P. V.

Of the Muscles of the Nose.

TH E R E is only one muscle on each side that can be called proper to the nose, though it is affected by several muscles of the face.

COMPRESSOR NARIS,

Arises, by a narrow beginning, from the root of the ala nasi externally, where part of the levator labii superioris alaeque nasi is connected to it; it spreads into a number of thin disgregated fibres which run up along the cartilage in an oblique manner, towards the dorsum of the nose, where it joins with its fellow, and is

Inserted slightly into the anterior extremity of the os nasi and nasal process of the superior maxillary bone, where it meets with some of
the

the fibres descending from the occipito-frontalis muscle.

Use. To compress the ala towards the septum nasi, particularly when we want to smell acutely; but, if the fibres of the frontal muscle which adhere to it act, the upper part of this thin muscle assists to pull the ala outwards.

Rinaeus, vel Nasalis, Dougl.

CHAP.

CHAP. VI.

Of the Muscles of the Mouth and Lips.

THE mouth has nine pair of muscles, which are inserted into the lips, and a common one formed by the termination of these, viz. three *above*, three *below*, three *outwards*, and the common muscle surrounds the mouth.

The three above are,

I. LEVATOR ANGULI ORIS,

Arises, thin and fleshy, from the hollow of the superior maxillary bone, between the root of the socket of the first dens molaris and the foramen infra-orbitarium.

Inserted into the angle of the mouth and under-lip, where it joins with its antagonist.

Use.

Use. To draw the corner of the mouth upwards, and make that part of the cheek opposite to the chin prominent, as in smiling.

Elevator labiorum communis, Dougl.

Caninus, Winfl.

2. LEVATOR LABII SUPERIORIS ALAE- QUE NASI,

Arises by two distinct origins; the first, broad and fleshy, from the external part of the orbital process of the superior maxillary bone which forms the lower part of the orbit, immediately above the foramen infra-orbitarium; the second portion arises from the nasal process of the superior maxillary bone, where it joins the os frontis at the inner canthus, descending along the edge of the groove for the lachrymal sac. The first and shortest portion is

Inserted into the upper lip and orbicularis labiorum; the second and longest,
into

into the upper lip, and outer part of the ala nasi.

Use. To raise the upper-lip towards the orbit, and a little outwards; the second portion serves to draw the skin of the nose upwards and outwards, by which the nostril is dilated.

Elevator labii superioris proprius, Dougl.

Incisivus lateralis, First portion; *Pyramidalis*, Second portion; Winsl.

2. DEPRESSOR LABII SUPERIORIS ALAEQUE NASI,

Arises, thin and fleshy, from the os maxillare superius, immediately above the joining of the gums with the two dentes incisivi, and the dens caninus; from thence it runs up under part of the levator labii superioris alaeque nasi.

Inserted into the upper lip and root of the ala nasi.

Use.

Use. To draw the upper-lip and alar nasi downwards.

Depressor alae nasi, Alb.

Incisivus medius, Winsl.

Depressor labii superioris proprius, Dougl.

The three below are,

I. DEPRESSOR ANGULI ORIS,

Arises, broad and fleshy, from the lower edge of the maxilla inferior, at the side of the chin, being firmly connected to that part of the platysma myoides, which runs over the maxilla to the angle of the mouth, to the depressor labii inferioris within, and to the skin and fat without, gradually turning narrower; and is

Inserted into the angle of the mouth, joining with the zygomaticus major, and levator anguli oris.

Use. To pull down the corner of the mouth.

Triangularis, Winsl.

Depressor labiorum communis, Dougl.

2. DEPRESSOR LABII INFERIORIS,

Arises, broad and fleshy, intermixed with fat, from the inferior part of the lower jaw next the chin, runs obliquely upwards, and is

Inserted into the edge of the under lip, extends along one half of the lip, and is lost in its red part.

Use. To pull the under lip and the skin of side of the chin downwards, and a little outwards.

Quadratus, Winsl.

Depressor labii inferioris proprius, Dougl.

3. LEVATOR LABII INFERIORIS,

Arises, from the lower jaw, at the roots of the alveoli of two dentes incisivi, and of the caninus ; is

Inserted into the under lip and skin of the chin.

Use. To pull the parts into which it is inserted upwards.

Levator menti, Alb.

Incisivus inferior, Winfl.

Elevator labii inferioris proprius, Dougl.

The three outward are,

I. BUCCINATOR,

Arises, tendinous and fleshy, from the lower jaw, as far back as the last dens molaris and forepart of the root of the coronoid process; fleshy from the upper jaw, between the last dens molaris and pterygoid process of the sphenoid bone, from whose extremity it arises tendinous, being continued between both jaws to the constrictor pharyngis superior, with which it joins; from thence proceeding with straight fibres, and adhering close to the membrane that lines the mouth, is.

In-

Inserted into the angle of the mouth, within the orbicularis oris.

Use. To draw the angle of the mouth backwards, and to contract its cavity, by pressing the cheek inwards, by which the food is thrust between the teeth.

Retractor anguli oris, Alb.

2. ZYGOMATICUS MAJOR,

Arises, fleshy, from the os malae, near the zygomatic future.

Inserted into the angle of the mouth, appearing to be lost in the depressor anguli oris.

Use. To draw the corner of the mouth and under lip towards the origin of the muscle, and make the cheek prominent, as in laughing.

Zygomaticus, Dougl.

3. ZYGOMATICUS MINOR,

Arises from the upper prominent part of the os malae, above the origin of the former muscle; and, descending obliquely downwards and forwards, is

Inserted into the upper lip, near the corner of the mouth, along with the levator anguli oris.

Use. To draw the corner of the mouth obliquely outwards, and upwards, towards the external canthus of the eye.

The common muscle is the

ORBICULARIS ORIS,

This muscle is formed by the muscles that move the lips; the fibres of the superior descending, those of the inferior ascending, and decussating each other about the corner of the mouth, run along the lip to join those of the opposite side, so that the fleshy fibres appear to surround the mouth, like a sphincter.

Use.

Use. To shut the mouth, by contracting and drawing both lips together, and to counteract all the muscles that assist in forming it.

Sphincter labiorum, Dougl.

Semi-orbicularis, Winfl.

Constrictor oris, Cowp.

There is another small muscle described by Albinus, which he calls *Nasalis labii superioris*; but it seems to be only some fibres of the former connected to the septum nasi.

CHAP.

CHAP. VII.

Of the Muscles of the Lower Jaw.

THE lower jaw has four pair of muscles, viz. *two*, which are seen on the side of the face, and *two* concealed by the angle of the jaw.

1. TEMPORALIS,

Arises, fleshy, from a semicircular ridge of the lower and lateral part of the parietal bone, from all the pars squamosa of the temporal bone, from the external angular process of the os frontis, and from the temporal process of the sphenoid bone; from these different origins, the fibres descend like radii towards the jugum, under which they pass, and are

Inserted, by a strong tendon into the upper part of the coronoid process of the low-

er

er jaw, in the duplicature of which tendon this process is inclosed as in a sheath, being continued down all its forepart to near the last dens molaris.

Use. To pull the lower jaw upwards, and press it against the upper, at the same time, drawing it a little backwards.

N. B. This muscle is covered by a tendinous membrane, called its *aponeurosis*, which arises from the bones that give origin to the upper and semicircular part of the muscle; and descending over it, is inserted into all the jugum, and the adjoining part of the os frontis. The use of this membrane is to fortify the muscle in its action. When this membrane is removed, a number of thin fleshy fibres are seen arising from it, which terminate in the tendon of the muscle, just as it passes under the jugum.

Crotaphite muscle, Winsl.

2. MASSETER,

Arises, by strong, tendinous, and fleshy fibres, which run, in different directions, from the superior maxillary bone, where it joins the os malae, and from the inferior and interior part of the zygoma, its whole length, as far back as the tubercle before the socket for the condyle of the lower jaw ; the external fibres slanting backwards, and the internal forwards.

Inserted into the angle of the lower jaw, and extending near the middle of it, and into the outside of the whole length of its coronoid process.

Use. To pull the lower to the upper jaw, and, by means of its oblique decussation, a little forwards and backwards.

3. PTERYGOIDAEUS INTERNUS,

Arises, tendinous and fleshy, from the inner and upper part of the internal plate of the
the

the pterygoid process, filling all the space between the two plates; and from the pterygoid process of the os palati between these plates.

Inserted into the angle of the lower jaw internally.

Use. To draw the jaw upwards, and to one side.

Pterygoideus major, Winsl.

4. PTERYGOIDAEUS EXTERNUS,

Arises from the outer side of the external plate of the pterygoid process of the sphenoid bone, from part of the tuberosity of the os maxillare adjoining to it, and from the root of the temporal process of the sphenoid bone.

Inserted into a cavity in the neck of the condyloid process of the lower jaw; some of its fibres are inserted into the ligament that connects the moveable cartilage and that process to each other.

E

Use.

Use. To pull the lower jaw forwards, to a side, and to thrust the teeth out beyond those of the upper jaw, and to pull the ligament from the joint, that it may not be pinched during these motions.

Pterygoideus minor, Winsl.

CHAP.

C H A P. VIII.

*Muscles which appear about the anterior
Part of the Neck.*

ON the side of the neck are two muscles
or layers.

I. PLATYSMA-MYOIDES,

Arises, by a number of slender disgregated fleshy fibres, from the cellular substance that covers the upper parts of the deltoid and pectoral muscles; in their ascent, they all unite to form a thin fleshy muscle, which runs obliquely upwards, along the side of the neck, adhering to the skin.

Inserted into the lower jaw, between its angle and the origin of the depressor anguli oris, to which it is firmly connected, and but slightly to the skin that covers the inferior

rior part of the masseter muscle and parotid glands.

Use. To assist the depressor anguli oris in drawing the skin of the cheek downwards; and, when the mouth is shut, it draws all that part of the skin, to which it is connected, below the lower jaw, upwards.

Musculus cutaneus, Winsl.

Quadratus genae, vel Latissimus colli,
Dougl.

Latissimus colli, Alb.

2. STERNO-CLEIDO-MASTOIDEUS,

Arises, by two distinct origins, the anterior tendinous and a little fleshy, from the top of the sternum near its junction with the clavicle; the posterior fleshy from the upper and anterior part of the clavicle; both unite a little above the anterior articulation of the clavicle, to form one muscle which runs obliquely upwards and outwards, to be

In-

Inserted, by a thick strong tendon, into the mastoid process, which it surrounds, and, gradually turning thinner, is inserted as far back as the lambdoid suture.

Use. To turn the head to one side, and bend it forwards.

Sterno-mastoidaeus and *Cleido-mastoidaeus*,
Alb.

Mastoidaeus, Dougl.

C H A P. IX.

Muscles situated between the lower Jaw and Os Hyoides.

TH E R E are four layers before, and two muscles at the side.

The four layers are,

I. DIGASTRICUS,

Arises, by a fleshy belly, intermixed with tendinous fibres, from the fossa at the root of the mastoid process of the temporal bone, and soon becomes tendinous; runs downwards and forwards; the tendon passes generally thro' the stylo-hyoidæus muscle, then it is fixed by a ligament to the os hyoides, runs obliquely upwards, turns fleshy again, and is

Inserted, by this anterior belly, into a rough sinuosity at the anterior edge of that part of the lower jaw called the *chin*.

Use.

Use. To pull the lower jaw a little downwards and outwards; and, when the jaws are shut, to raise the larynx, and, consequently, the pharynx, upwards, as in deglutition.

Biventer maxillae inferioris, Alb.

2. MYLO-HYOIDEAEUS,

Arises, fleshy, from all the inside of the lower jaw, between the last dens molaris, and the middle of the chin, where it joins with its fellow.

Inserted into the lower edge of the basis of the os hyoides, and joins with its fellow.

Use. To pull the os hyoides forwards, upwards, and to a side.

3. GENIO-HYOIDEAEUS,

Arises, tendinous, from a rough protuberance in the middle of the lower jaw internally, or inside of the chin.

Inserted into the basis of the os hyoides.

Use.

Use. To draw this bone upwards and forwards.

4. GENIO-GLOSSUS,

Arises, tendinous, from a rough protuberance in the inside of the middle of the lower jaw; its fibres run, like a fan, forwards, upwards, and backwards, and are

Inserted into the tip, middle, and root of the tongue, and base of the os hyoides, near its cornu.

Use. According to the direction of its fibres, to draw the tip of the tongue backwards into the mouth, the middle downwards, and to render its dorsum concave; to draw its root and os hyoides forwards, and to thrust the tongue out of the mouth.

The two muscles at the side are,

1. HYO-GLOSSUS,

Arises, broad and fleshy, from the base, cornu, and appendix of the os hyoides; the fibres run straight upwards to be

In-

Inserted into the side of the tongue, near the stylo-glossus.

Use. To pull the tongue to a side and backwards.

Basio-cerato-chondro-glossus, Alb.

Cerato-glossus, Dougl.

2. LINGUALIS,

Arises from the root of the tongue laterally; runs forwards between the hyo-glossus and genio-glossus, to be

Inserted into the tip of the tongue, along with part of the stylo-glossus.

Use. To contract the substance of the tongue, and bring it backwards.

CHAP. X.

Muscles situated between the Os Hyoides and Trunk.

TH E S E may be divided into two layers.

The first layer consists of two muscles.

1. STERNO-HYOIDAEUS,

Arises, thin and fleshy, from the cartilaginous extremity of the first rib, the upper and inner part of the sternum, and from the clavicle where it joins with the sternum.

Inserted into the base of the os hyoides.

Use. To pull the os hyoides downwards.

2. OMO-HYOIDAEUS,

Arises, broad, thin, and fleshy, from the superior costa of the scapula, near the femi-
lunar

lunar nitch, and from the ligament that runs a-crofs it; thence ascending obliquely, it becomes tendinous below the fterno-cleido-maftoid mufcle, and growing flefhy again, is

Inferted into the bafe of the os hyoides, between its cornu and the infertion of the fterno-hyoidaeus.

Ufe. To pull the os hyoides obliquely downwards.

Coraco-hyoidaeus, Alb. and Dougl.

The fecond layer confifts of three mufcles.

I. STERNO-THYROIDAEUS,

Arifcs, flefhy, from the whole edge of the uppermoft bone of the fternum internally, oppofite to the cartilage of the firft rib, from which it receives a fmall part of its origin.

Inferted into the furface of the rough line at the external part of the inferior edge of the thyroid cartilage.

Ufe. To draw the larynx downwards.

2. Hyo-

2. HYO-THYROIDAEUS,

Arises, fleshy, from part of the basis, and almost all the cornu of the os hyoides.

Inserted into the rough line, opposite to the former.

Use. To pull this cartilage upwards, or the os hyoides downwards.

Thyro-hyoidaeus, vel Hyo-thyroidaeus, Winsl.

3. CRICO-THYROIDAEUS,

Arises from the side and forepart of the cricoid cartilage, running obliquely upwards.

Inserted by two portions; the first, into the lower part of the thyroid cartilage; the second, into its inferior cornu.

Use. To depress the thyroid, or to elevate the cricoid, cartilage.

CHAP. XI.

*Muscles situated between the lower Jaw
and Os Hyoides laterally.*

THEY are five in number. Three proceed from the styloid process of the temporal bone, from which they have half of their names; and two from the pterygoid process of the sphenoid bone.

The three from the styloid process are,

I. STILO-GLOSSUS,

Arises, tendinous and fleshy, from the styloid process, and from a ligament that connects that process to the angle of the lower jaw.

Inserted into the root of the tongue, runs along its side, and is insensibly lost near its tip.

Use.

Use. To draw the tongue laterally and backwards.

2. STYLO-HYOIDEÆUS,

Arises, by a round tendon, from the middle and inferior part of the styloid process.

Inserted, into the os hyoides at the junction of the base and cornu.

Use. To pull the os hyoides to one side, and a little upwards.

N. B. Its fleshy belly is generally perforated by the tendon of the digastric muscle, on one or both sides. There is often another accompanying it, called, *Stylo-hyoidæus alter*, and has the same origin, insertion, and use.

3. STYLO-PHARYNGÆUS,

Arises, fleshy, from the root of the styloid process.

Inserted into the side of the pharynx opposite to the superior cornu of the thyroid cartilage.

Use.

Use. To dilate and raise the pharynx upwards.

The two from the pterygoid process are,

1. CIRCUMFLEXUS, or TENSOR PALATI,

Arises from the spinous process of the sphenoid bone, behind the foramen ovale, which transmits the third branch of the fifth pair of nerves; from the Eustachian tube, not far from its osseous part; it then runs down along the pterygoideus internus, passes over the hook of the internal plate of the pterygoid process by a round tendon, which soon spreads into a broad membrane.

Inserted into the velum pendulum palati, and the semilunar edge of the os palati, and extends as far as the suture which joins the two bones. Generally some of its posterior fibres join with the constrictor pharyngis superior, and palato-pharyngaeus.

Use.

Use. To stretch the velum, to draw it downwards, and to a side towards the hook. It has little effect upon the tube, being chiefly connected to its osseous part.

Circumflexus palati, Alb.

Spheno-salpingo-staphilinus, seu *Staphilinus externus*, Winsl.

Musculus tubae novus, Valsal. vel *Palato-salpingaeus*, Dougl.

2. LEVATOR PALATI,

Arises, tendinous and fleshy, from the extremity of the pars petrosa of the temporal bone, where it is perforated by the Eustachian tube, and also from the membranous part of the same tube.

Inserted into the whole length of the velum pendulum palati, as far as the root of the uvula, and unites with its fellow.

Use.

Use. To draw the velum upwards and backwards, so as to shut the passage from the fauces into the mouth and nose.

Levator palati mollis, Alb.

Petro-salpingo-staphilinus, vel *Salpingo-staphilinus internus*, Winfl.

Salpingo-staphilinus, Valsal. *Pterigo-staphilinus externus*, vulgo, Doug.

Spheno-staphilinus, Cowp.

Previous to the description of the muscles situated about the passage into the throat, it will be necessary to mention the principal parts to which they are connected.

Upon looking into any person's mouth, when wide opened, we see a soft curtain hanging from the palate bones, named, *Velum pendulum palati*. In the middle of which, we likewise observe a papilla projecting from the velum, named, *Uvula*, or Pap of the throat. From each side of the uvula, at its root, two arches, or columns, are sent down ; the anterior to the root of the

G

tongue,

tongue, the posterior to the pharynx. Between these arches, on each side, the cellular glands, called *Amygdalae*, or Almonds of the Ears, are situated.

The common opening behind the anterior arch may be named *Fauces*, or Top of the Throat, from which there are six passages, viz. two upwards, being one to each nostril; two at the sides, or one to each ear, called the *Eustachian tubes*; two downwards, the anterior is the passage through the *glottis* and *larynx*, into the *trachea*, which terminates in the lungs; the posterior is the largest, named *Pharynx*, or top of the *Oesophagus*, which leads to the stomach.

CHAP.

C H A P. XI.

Muscles situated about the entry into the Fauces.

TH E R E are two on each side, and a single one in the middle.

The two on each side are,

I. CONSTRICTOR ISTHMI FAUCIUM,

Arises, by a slender beginning, from the side of the tongue, near its root; from thence running upwards, within the anterior arch, before the amygdala, it is

Inserted into the middle of the velum pendulum palati, at the root of the uvula anteriorly, being connected with its fellow, and with the beginning of the palato-pharyngæus.

Use.

Use. Draws the velum towards the root of the tongue, and, with its fellow, contracts the passage between the two arches, by which it shuts the opening into the fauces.

Glossopharynx, Winsl. and Dougl.

2. PALATO-PHARYNGÆUS,

Arises, by a broad beginning, from the middle of the velum pendulum palati, at the root of the uvula posteriorly, and from the tendinous expansion of the circumflexus palati. The fibres are collected within the posterior arch behind the amygdala, and run backwards to the top and lateral part of the pharynx, where the fibres are scattered, and mix with those of the stylo-pharyngæus.

Inserted into the edge of the upper and back part of the thyroid cartilage, some of its fibres being lost between the membrane of the pharynx and the two inferior constrictors.

Use.

Use. Draws the uvula and velum backwards ; and, at the same time, pulls the pharynx upwards, and shortens it ; with the constrictor superior and tongue, it assists in shutting the passage into the nostrils, and, in swallowing, it thrusts the food from the fauces into the pharynx.

Thyro-staphilinus, Dougl.

Thyro-pharyngo-staphilinus, Winfl.

The one in the middle is the

AZYGOS UVULAE,

Arises, fleshy, from the extremity of the future which joins the palate bones, runs down the whole length of the velum and uvula, resembling a small earth worm, and adhering to the tendons of the circumflexi.

In

Inserted into the tip of the uvula.

Use. Raises the uvula upwards and forwards, and shortens it.

Palato-staphilinus, Dougl.

Staphilinus, or *Epistaphilinus*, Winsl.

CHAP.

C H A P. XII.

Muscles situated about the Glottis, and behind the Larynx.

THEY consist generally of three pair of small muscles, and a single one.

1. CRICO-ARYTENOIDAEUS POSTICUS,

Arises, fleshy, from the back part of the cricoid cartilage, and is

Inserted into the posterior part of the base of the arytenoid cartilage.

Use. To open the rima glottidis a little, and to stretch the ligaments so as to make them tense.

2. CRICO-ARYTENOIDAEUS LATERALIS,

Arises, fleshy, from the cricoid cartilage, laterally, where it is covered by part of the thyroid, and is

In-

Inserted into the side of the base of the arytenoid cartilage near the former.

Use. To open the rima glottidis, by pulling the ligaments from each other.

3. ARYTENOIDAEUS OBLIQUUS,

Arises from the base of one arytenoid cartilage, and crossing its fellow, is

Inserted near the tip of the other arytenoid cartilage.

Use. When both act, they pull the arytenoid cartilages towards each other.

N. B. Very often one of these is wanting.

Arytenoidaeus minor, Dougl.

The single muscle is the

ARYTENOIDAEUS TRANSVERSUS,

Arises from the side of one arytenoid cartilage, near its articulation with the cricoid,
and

and extends to the tip of the other; the fibres run straight across.

Inserted, in the same manner, into the other arytenoid cartilage.

Use. To shut the rima glottidis, by bringing these two cartilages, with the ligaments, near each other.

Arytenoidaeus major, Dougl.

Besides these, there are a few muscular fibres on each side, which have three different directions, from whence they are named,

1. THYRO-ARYTENOIDAEUS,

Arises, by a number of disgregated fibres, from the posterior part of the thyroid cartilage laterally, and are

Inserted into the arytenoid cartilage over the insertion of the crico-arytenoides lateralis muscle.

Use. To open the external rima, and to relax the upper side of the ventriculus laryngis, and the ligaments.

2. THYRO-EPIGLOTTIDAEUS,

Arises, by a few pale fibres, near the former, and is

Inserted into the epiglottis laterally.

Use. To draw the epiglottis obliquely downwards, or, when both act, directly downwards, and, at the same time, expands that soft cartilage.

3. ARYTENO-EPIGLOTTIDAEUS,

Arises, by a number of small fibres, from the lateral and upper part of the arytenoid cartilage, and running along the outer side of the external rima, is

Inserted into the epiglottis along with the former.

Use.

Use. To pull that side of the epiglottis towards the external rima ; or, when both act, to pull it close upon the glottis ; and it is counter-acted by the elasticity of the epiglottis.

CHAP.

C H A P. XIII.

Muscles situated on the posterior Part of the Pharynx.

OF these there are three pair.

I. CONSTRUCTOR PHARYNGIS SUPERIOR,

Arises above, from the cuneiform process of the os occipitis, before the foramen magnum, near the holes where the ninth pair of nerves passes out ; lower down, from the pterygoid process of the sphenoid bone, from the upper and under jaw, near the roots of the last dentes molares, and between the jaws, it is continued with the buccinator muscle, and with some fibres from the root of the tongue.

In-

Inserted into a white line, in the middle of the pharynx, where it joins with its fellow, and is covered by the constrictor medius.

Use. To compress the upper part of the pharynx, and draw it forwards and upwards.

Cephalo-pharyngaeus, Pterygo-pharyngaeus, Mylo-pharyngaeus, Glosso-pharyngaeus, Dougl.

2. CONSTRICTOR PHARYNGIS MEDIUS,

Arises, from the appendix of the os hyoides, from the cornu of that bone, and from the ligament which connects it to the thyroid cartilage, the fibres of the superior part running obliquely upwards, and, covering the former, terminate in a point.

Inserted into the middle of the cuneiform process of the os occipitis, before the foramen magnum; the inferior fibres run more
transf-

transversely, to join with its fellow in the white line.

Use. To compress that part of the pharynx which it covers, and to draw it upwards.

Hyo-pharyngaeus, Syndesmo-pharyngaeus,
Douglass.

3. CONSTRICTOR PHARYNGIS INFERIOR,

Arises, from the side of the thyroid cartilage, near the attachment of the sternohyoidaeus and hyo-thyroides muscles; and from the cricoid cartilage, near the cricothyroidaeus. This muscle is the largest of the three, and is

Inserted into the white line, where it joins with its fellow, the superior fibres running obliquely upwards, covering the inferior part of the former, and terminating in a point; the inferior fibres run more trans-

transversely, and cover the beginning of the oesophagus.

Use. To compress that part of the pharynx which it covers, and to raise it a little upwards.

*Thyro-pharyngeus, Crico-pharyngeus,
Douglass.*

CHAP.

CHAP. XIV.

Muscles situated on the Anterior Part of the Abdomen.

THEY consist of three broad layers on each side, always a long one, and generally also a short one, on each side of the linea alba.

The three layers are,

I. OBLIQUUS DESCENDENS EXTERNUS,

Arises, by eight heads, from the lower edges of an equal number of inferior ribs, at a little distance from their cartilages; it always intermixes, in a serrated manner, with portions of the serratus major anticus, and generally coheres to the pectoralis major, inter-

intercostals, and latissimus dorsi; which last covers the edge of that portion extended from the last rib to the posterior part of the spine of the os ilium: From these origins the fibres run down obliquely forwards, and terminate in a thin broad tendon, whose fibres are continued in the same direction.

Inserted into the whole length of the *linea alba**, becomes thicker towards the lower part of the abdomen, and is perforated in the middle by the *umbilicus* †. The under part
of

* The *linea alba* is formed by the tendinous fibres of the two oblique and transverse muscles interlaced with those of the opposite side, the whole way from the cartilago ensiformis to the os pubis; so that some think they should be called three diaphragmic muscles, with a broad middle tendon and two fleshy bellies.

† The *umbilicus* was originally the passage for the vessels that connected the foetus to the secundines, and is really a hole through the teguments and tendons, filled up only by cellular substance, and covered within by the peritonaeum.

of the tendon divides into two columns, which leave an oval space between them, named the *ring* * of the external oblique muscle, for the passage of the spermatic cord, or round ligament of the womb: The anterior superior column passes over the cartilage between the ossa pubis, and is fixed to the opposite os pubis; the other is fixed to the os pubis of the same side. It is also inserted, tendinous and fleshy, into the middle of the spine of the ilium; from that part which is named its anterior superior spinous process, opposite to the linea semilunaris †, it is stretched, tendinous, to the

* The *ring* of the external oblique muscle is made somewhat circular, by a thin tendinous or tough cellular substance which helps to fill it up; and, though a few muscular fibres of the internal are separated, yet the stricture in herniae only happens in the tendon of the external.

† *Linea semilunaris*, lies on the outside of the rectus muscle, and is formed by the tendinous fibres of the two layers of the internal oblique being interlaced with the tendons of the external and transversalis at this place.

the os pubis, and is named *Poupart*, or *Fallopian's ligament* *. From this ligament it sends a tendinous layer, which is lost in the membranous fascia of the thigh.

Use. Supports and compresses the peritoneum and abdomen; assists the evacuations of foeces and urine, and likewise in the exclusion of the foetus; thrusts the diaphragm upwards, and draws down the ribs in expiration; bends the body when the ribs are fixed, and raises the pelvis obliquely.

Obliquus externus abdominis, Alb.

Obliquus descendens, Dougl.

2. OB-

* *Poupart*, or *Fallopian's ligament* is the inferior part of the tendon of the external oblique extending from the anterior superior spinous process of the ilium to the os pubis, where it is thickest, in order to strengthen the inferior part of the abdomen; here it is not inserted into any bone, but passes over the blood-vessels of the inferior extremity, and in women, from the greater size of the pelvis, is longer and looser, by which they are more subject to crural herniae; but, by the size of the spermatic cord, men are more liable to the inguinal.

2. OBLIQUUS ASCENDENS INTERNUS,

Arises, from the spine of the ilium, the whole length between the posterior and superior anterior spinous process; from the tendon of the latissimus dorsi, behind and before; from Poupart's ligament, at the middle of which it sends off the beginning of the cremaster muscle; and the spermatic chord or round ligament of the womb, passes under its thin edge, except a few detached fibres. It arises also from the forepart of the os pubis.

Inserted into the cartilago ensiformis, into the cartilages of the seventh and those of all the false ribs; but, at the upper part, it is extremely thin, resembling a cellular membrane, and only becomes fleshy at the cartilage of the tenth rib: Here its tendon divides into two layers*; the anterior layer, with

* To obtain a proper view of the two layers of the tendon of the internal oblique muscle, both the oblique muscles

with the greatest portion of the inferior part of the posterior layer, joins the tendon of the external oblique, and runs over the rectus to be inserted into the whole length of the linea alba. The posterior layer joins the tendon of the transversalis muscle, as low as half way between the umbilicus and os pubis; but, below this place, only a few fibres of the posterior layer are seen, and the rest of it passes behind the rectus muscle, and is inserted into the linea alba; so that the whole tendon of the external oblique muscle, with the greatest part of the anterior layer of

muscles should be raised as far forwards as their joining near the linea semilunaris; then the tendon before the rectus must be cut parallel to the linea alba, and turned outwards as far as the outer edge of the rectus; by which the whole of the rectus is brought into view, and the tendons are preserved: But Douglas directs to cut the posterior layer of the internal oblique, where it joins with the transversalis; by this method the rectus is laid bare, but the structure of the tendinous sheath which incloses it is destroyed.

of the internal oblique, passes before the rectus muscle ; and the whole posterior layer of the internal oblique, excepting at the inferior part, together with the whole tendon of the transversalis muscle, pass under the rectus, and are inserted into the linea alba.

Use. To assist the former ; but it bends the trunk in the reverse direction.

Obliquus internus abdominis. Alb. and Winfl.

Obliquus ascendens, Dougl.

3. TRANSVERSALIS,

Arises, by a broad thin tendon, from the transverse process of the last vertebra of the back, and from those of the four superior vertebrae of the loins ; fleshy, from the whole spine of the os ilium internally, and from the tendon of the external oblique muscle, where it intermixes with some fibres of the internal oblique.

Inserted into the whole length of the linea alba, cartilago-ensiformis, the inner part of the cartilages of the seven lower ribs, and has many of its fibres continued with the diaphragm and lower intercostal muscles.

Use. To assist the two oblique muscles; so that it might properly be called the *constrictor abdominis*.

Transversus abdominis, Alb.

The long muscle in the middle is named,

RECTUS ABDOMINIS,

Arises, by two heads, from the fore and upper part of the os pubis, and from the cartilage or symphysis which joins the two ossa pubis to each other; runs upwards, the whole length, and parallel to the linea alba.

Inserted into the cartilages of the three inferior true ribs, the extremity of the sternum, and intermixes with some fibres of the pectoral muscle.

It

It is generally divided by three tendinous *intersections* ; the first is at the umbilicus, the second where it runs over the cartilage of the seventh rib, the third in the middle between these ; and there is commonly a half intersection below the umbilicus : These seldom penetrate through the whole thickness of the muscle ; they adhere firmly to the anterior part of the sheath, but very slightly to the posterior layer.

Use. To compress the fore part, but more particularly the lower part of the belly ; to bend the trunk forwards, or to raise the pelvis. By its tendinous intersections, it is enabled to contract at any of the intermediate spaces ; and, by its connection with the tendons of the other muscles, it is prevented from changing place, and from rising into a prominent form when in action.

The short muscle in the middle is named,

PYRAMIDALIS,

Arises, along with the rectus, and, running upwards within the same sheath, is

In-

Inserted, by an acute termination, near half way between the os pubis and umbilicus, into the linea alba and inner edge of the rectus muscle.

As it is frequently wanting in both sides, without any inconveniency, its

Use seems to be, to assist the inferior part of the rectus.

K

CHAP.

CHAP. XV.

Muscles about the Male Organs of Generation.

THE *testicles* have a thin muscle common to both, and one proper to each.

The common muscle is the

DARTOS,

This muscular membrane, tho' it appears to be no more than a condensation of the cellular membrane lining the scrotum ; yet, as it is evidently capable of contracting, it must have a mixture of muscular fibres, and these seem to be sent from the cremaster muscle.

Use. To contract the scrotum about the testes, in which it is assisted by the elasticity of the skin.

The muscle proper to each testicle is the

CREMASTER,

Arises, from the internal oblique, where a few fibres of that muscle intermix with the transversalis, near the junction of the os ilium and pubis, over which part it passes, after having pierced the ring of the external oblique, and then it descends upon the spermatic cord.

Inserted into the tunica vaginalis of the testicle, upon which it spreads, and is insensibly lost.

Use. To suspend and draw up the testicle, and to compress it in the act of coition.

The *penis* has three pair of muscles,

I. ERECTOR PENIS,

Arises, tendinous and fleshy, from the tuberosity of the os ischium, and runs upwards, embracing the whole crus of the penis.

In-

Inserted into the strong tendinous membrane that covers the corpora cavernosa penis, as far up as the union of these bodies.

Use. To compress the crus penis, by which the blood is pushed into the corpora cavernosa, and the penis is by that means more compleatly erected.

Ischio-cavernosus, Winsl.

2. ACCELERATOR URINAE, seu EJACULATOR SEMINIS,

Arises, fleshy, from the sphincter ani and membranous part of the urethra, and tendinous from the crus and beginning of the corpus cavernosum penis; the inferior fibres run more transversely, and the superior descend in an oblique direction.

Inserted into a line in the middle of the bulb, where it joins with its fellow, by which the bulb is compleatly enclosed.

Use.

Use. To drive the urine or semen forwards, and, by grasping the bulb of the urethra, to push the blood towards its corpus cavernosum and the glans, which last it more particularly serves to distend.

Bulbo-cavernosus, Winsl.

3. TRANSVERSALIS PENIS,

Arises from the tough fatty membrane that covers the toberosity of the os ischium; from thence it runs transversely inwards, and is

Inserted into the accelerator urinae, and into that part of the sphincter ani which covers the bulb.

Use. To dilate the bulb, and draw the perinaeum and verge of the anus a little outwards and backwards.

Transversalis urethrae, Winsl.

Transversus Perinaei, Alb.

Levator parvus, seu externus, Dougl.

There

There is sometimes a fourth muscle, named *transversalis penis alter*, which arises near the former, and has the same *direction*, *insertion*, and *use*.

Inferior prestatæ, Winsl.

CHAP.

C H A P. XVI.

Muscles of the Anus.

TH E *anus* has a single muscle, and one pair.

The single muscle is

SPHINCTER ANI,

Arises from the skin and fat that surround the verge of the anus on both sides, near as far out as the tuber of the os ischium; the fibres are gradually collected into an oval form, and surround the extremity of the rectum.

Inserted, before, by a narrow point, into the perinaeum, *acceleratores urinae*, and *transversalis penis*; behind, by an acute termination, into the extremity of the os coccygis.

Use

Use. Shuts the passage through the anus into the rectum; pulls down the bulb of the urethra, by which it assists in ejecting the urine and semen.

Sphincter externus, Alb. and Dougl.

Sphincter cutaneus, Winsl.

LEVATOR ANI,

Arises from the os pubis and os ischium within the pelvis, as far up as the upper edge of the foramen thyroideum; from the thin tendinous membrane that covers the obturator internus and coccygaeus muscles; from the spinous process of the os ischium; and its fibres run down like rays from a circumference to a center.

Inserted into the sphincter ani and os coccygis, and almost surrounds the extremity of the rectum, neck of the bladder, prostate gland, and part of the vesiculae feminales.

Use.

THE MUSCLES. 81

Use. To draw the rectum upwards after the evacuation of the foeces, and to assist in shutting it; to sustain the contents of the pelvis, and to help in ejecting the semen, urine, and contents of the rectum.

L CHAP.

C H A P. XVII.

Muscles of the Female Organs of Generation.

TH E *clitoris* has one pair,

ERECTOR CLITORIDIS,

Arises from the crus of the os ischium internally, and in its ascent covers the crus of the clitoris, as far up as the os pubis.

Inserted into the upper part of the crus and body of the clitoris.

Use. To erect the clitoris, by pushing the blood into its cavernous substance.

First Muscle of the Clitoris, Dougl.

The *vagina* has one pair,

SPHINCTER VAGINAE,

Arises from the sphincter ani, and from the posterior side of the vagina, near the perinaeum; from thence it runs up the side of the vagina, near its external orifice, opposite to the nymphae, and covers the corpus cavernosum vaginae.

Inserted into the body, or union of the crura clitoridis.

Use. Contracts the mouth of the vagina, and by compressing the corpus cavernosum, pushes the blood into the clitoris and nymphae.

Constrictor Cunni, Alb.

Second Muscle of the Clitoris, Doug.

The *Perinaeum* has one pair,

TRANSVERSUS PERINAEI,

Arises, as in the male, from the fatty cellular membrane which covers the tuberosity of the os ischium.

In-

Inserted into the upper part of the sphincter ani, and into a white hardish tough substance in the perinaeum, between the lower part of the pudendum and anus.

Use. To sustain and keep the perinaeum in its proper place.

The *anus*, as in the male, has a single muscle, and one pair,

SPHINCTER ANI,

Arises, as in the male, from the skin and fat surrounding the extremity of the rectum.

Inserted above, into the white tough substance in the perinaeum, and below, into the point of the os coccygis.

Use. To shut the passage into the rectum, and, by pulling down the perinaeum, to assist in contracting the mouth of the vagina.

LEVATOR ANI,

Arises, as in the male, within the pelvis, and descends along the inferior part of the vagina and rectum.

Inserted into the perinaeum and sphincter ani.

Use. To raise the extremity of the rectum upwards, to contract the inferior part of the rectum, and to assist in contracting and supporting the vagina.

CHAP.

C H A P. XVIII.

Muscles situated within the Pelvis.

OF these there are two pair.

I. OBTURATOR INTERNUS,

Arises, fleshy, from the os ilium, ischium, and pubis, round most of the internal circumference of the foramen thyroideum, formed by the two last named bones; its inside is covered by a portion of the levator ani, and appears to be divided into a number of fasciculi, which unite and form a roundish tendon that passes out of the pelvis, between the posterior sacro-ischiatic ligament and tuberosity of the os ischium; where it passes over the capsular ligament, it is inclosed, as in a sheath, by the gemini muscles.

In-

Inserted, by a round tendon, into the large pit at the root of the trochanter major.

Use. To move the os femoris a little upwards, and to roll it obliquely outwards.

Marsupialis, seu *Obturator internus*,
Douglass.

N. B. The insertion of this muscle should not be prosecuted, until the muscles of the thigh, to which it belongs, are dissected.

2. COCCYGAEUS,

Arises, tendinous and fleshy, from the spinous process of the os ischium, and covers the inside of the posterior sacro-ischiatic ligament; from this narrow beginning, it gradually increases, to form a thin fleshy belly, interspersed with tendinous fibres.

In-

Inserted into the extremity of the os sacrum, and near the whole length of the os coccygis laterally.

Use. To move the os coccygis forwards, and to defend the ligament in time of the exclusion of the foetus, or hardened foeces.

CHAP.

CHAP. XIX.

Muscles situated within the Cavity of the Abdomen.

THESE consist of a single muscle, and four pair.

DIAPHRAGMA,

This broad thin muscle, which makes a compleat septum between the thorax and abdomen, is commonly divided into two portions.

1. The Superior or Greater Muscle of the
DIAPHRAGM,

Arises, by distinct fleshy fibres, from the cartilago ensiformis, from the cartilages of
M the

the seventh, and of all the inferior ribs on both sides, the fibres from the cartilago ensiformi running straight down; from the seventh and eighth ribs obliquely downwards; from the ninth and tenth transversely inwards; and from the eleventh and twelfth obliquely upwards. From these different origins, the fibres run, like radii from the circumference to the center of a circle, and are

Inferted into a semilunar tendon, of a considerable breadth, which is situated in the middle of the diaphragm, and perforated towards the right side, by a triangular hole, for the passage of the vena cava inferior.

2. The Inferior, Lesser Muscle, or Appendix of the DIAPHRAGM,

Arises, by strong fleshy fibres, from the inferior part of the middle tendon; the fibres run obliquely downwards and inwards, and form two fleshy columns, which leave an oval space between them, for the passage

passage of the oesophagus and eighth pair of nerves : Immediately below this space, the fibres of the opposite sides decussate; they soon separate and form two crura, the one on the right side being thicker, longer, and more towards the middle of the spine than the left; between these crura, and close to the spine, the aorta descends, the vena azygos and thoracic duct ascend. This inferior portion, to render the description easier, may be said to be

Inserted, fleshy, partly into the root of the transverse process of the second vertebra of the loins on both sides; between this and the crus, the anterior branch of the great sympathetic nerve passes forwards, and on the outside, the posterior branch passes downwards; also, between this portion and that part of the superior muscle which ascends from the last rib, there is a triangular space left, where the pleura and peritonaeum are contiguous. The crura turn tendinous about the inferior part of the second
ver-

vertebra of the loins, and may be traced down as low as the fourth vertebra, where they join and send off a thin tendinous expansion, which unites with the tendinous crust that covers the anterior part of the spine.

Use. The diaphragm is the principal agent in *respiration*, particularly in *inspiration*; for, when it is in action, the fibres, from their different attachments, endeavour to bring themselves into a plane towards the middle tendon, by which the cavity of the thorax is enlarged, particularly at the sides, where the lungs are chiefly situated; and, as the lungs must always be contiguous to the inside of the thorax and upper side of the diaphragm, the air rushes into them, in order to fill up the increased space. This muscle is constantly assisted by the two rows of intercostals, which elevate the ribs, and the cavity of the thorax is more enlarged; in time of violent exercise, or whatever cause

cause drives the blood with unusual celerity towards the lungs, the subclavian and pectoral muscles, the *ferrati antici majores*, the *ferrati postici superiores*, and *scalleni* muscles, are brought into action. And, in laborious inspiration, the muscles which arise from the upper part of the trunk, when the parts into which they are inserted are fixed, likewise assist. In *expiration*, the diaphragm is relaxed and pushed up by the pressure of the abdominal muscles upon the viscera of the abdomen ; and, at the same time that they press upwards, they also, together with the *sterno-costales* and *ferrati postici inferiores*, pull down the ribs, and are assisted in a powerful manner by the elasticity of the cartilages that join the ribs to the sternum ; by which the cavity of the thorax is diminished, and the air suddenly pushed out of the lungs ; and, in laborious expiration, the *quadrati lumborum*, *sacro-lumbales*, and *longissimi dorsi*, concur in pulling down the ribs.

The four pair are,

1. QUADRATUS LUMBORUM,

Arises, pretty broad, tendinous and fleshy, from the posterior part of the spine of the os ilium.

Inserted into the transverse processes of all the vertebrae of the loins, into the last rib near the spine, and by a small tendon into the side of the last vertebra of the back.

Use. To move the loins to one side, pull down the last rib, and, when both act, to bend the loins forwards.

Quadratus, seu Lumbaris externus, Winsl.

2. PSOAS PARVUS,

Arises, fleshy, from the sides of the two upper vertebrae of the loins, and sends off a small long tendon, which ends thin and flat, and is

Inserted into the brim of the pelvis, at the junction of the os ilium and pubis.

Use. To assist the psoas magnus in bending the loins forwards, and, in certain positions, to assist in raising the pelvis.

N. B. This muscle is very often wanting.

3. PSOAS MAGNUS,

Arises, fleshy, from the side of the body, and transverse process of the last vertebra of the back, and, in the same manner, from all those of the loins, by as many distinct slips.

Inserted, tendinous, into the trochanter minor of the os femoris, and fleshy into that bone, a little below the same trochanter.

Use. To bend the thigh forwards, or, when the inferior extremity is fixed, to assist in bending the body.

Psoas, seu lumbaris internus, Winsl.

4. ILIACUS INTERNUS,

Arises, fleshy, from all the inner lip of the spine of the os ilium, from the edge of that bone between its anterior superior spinous process and the acetabulum, and from most of the hollow part of the ilium. It joins with the psoas magnus, where it begins to become tendinous, and is

Inserted along with it.

Use. To assist the psoas in bending the thigh, and to bring it directly forwards.

N. B. The insertion of the two last muscles should not be prosecuted till the muscles of the thigh are dissected.

CHAP. XX.

Muscles situated on the Anterior Part of the Thorax.

THESE may be divided into two layers. The first layer consists of one muscle, named

PECTORALIS MAJOR,

Arises from the cartilaginous extremities of the fifth and sixth ribs, where it always intermixes with the external oblique muscle of the abdomen; from almost the whole length of the sternum, and from near half of the anterior part of the clavicle: The fibres run towards the axilla, and are twisted in a folding manner.

Inserted, by two broad tendons, which cross each other, at the upper and inner

part of the os humeri, immediately above the infertion of the deltoid muscle, and outer side of the groove for lodging the tendon of the long head of the biceps.

Use. To move the arm forwards, and obliquely upwards, towards the sternum.

Pectoralis, Alb.

The second layer consists of three muscles,

I. SUBCLAVIUS,

Arises, tendinous, from the clavicle, just where it is connected by a ligament to the coracoid process of the scapula; it soon becomes fleshy, and adheres to all the inferior part of that bone, near the anterior extremity of which it runs off obliquely downwards.

Inserted, tendinous, into the cartilage that joins the first rib to the sternum.

Use.

Use. To pull the first rib upwards.

2. PECTORALIS MINOR,

Arises, tendinous, from the coracoid process of the scapula; but soon grows fleshy and broad.

Inserted, tendinous and fleshy, into the upper edge of the third, fourth, and fifth ribs, near where they join with their cartilages.

Use. To raise the ribs upwards, or to bring the scapula forwards.

Serratus anticus, Alb.

Serratus minor anticus, Dougl.

3. SERRATUS MAGNUS,

Arises, fleshy, from the whole base of the scapula internally, between the insertion of the Rhomboid and the origin of the subscapularis muscles, being folded about the two angles of the scapula.

In.

Inserted into the nine superior ribs, by an equal number of fleshy digitations, resembling the teeth of a saw.

Use. To dilate the thorax, by pulling up the ribs; or, to move the scapula forwards and downwards.

Serratus major anticus, Dougl.

CHAP.

C H A P. XXI.

Muscles situated between the Ribs, and within the Thorax.

BETWEEN the ribs, on each side, there are eleven double rows of muscles, and are therefore named intercostals, which decussate each other like the strokes of the letter X,

I. INTERCOSTALES EXTERNI,

Arise from the inferior acute edge of each superior rib, and run obliquely forwards, the whole length, from the spine to the joining of the ribs with their cartilages, from which, to the sternum, there is only a thin membrane covering the internal intercostals.

Inserted into the upper obtuse edge of each inferior rib, as far back as the spine, into which the posterior portion is fixed.

2. INTERCOSTALES INTERNI,

Arise in the same manner as the external ; but they begin at the sternum, and run obliquely backwards, as far as the angle of the rib, and, from that to the spine, they are wanting.

Inserted in the same manner as the external.

Use. By means of these muscles, the ribs are equally raised upwards during inspiration. Their fibres being oblique, give them a greater power of bringing the ribs near each other, than could be performed by straight ones ; but, by the obliquity of the fibres, they are almost brought contiguous, and, as the fixed points of the ribs are before and behind, if the external were continued forwards to the sternum, and the internal backwards to the spine, it would hinder their motion, which is therefore great.

greatest in the middle, though the obliquity of the ribs render it less perceptible; and, instead of raising, the fibres fixed to the sternum and spine would depress the ribs.

N. B. The portions of the external intercostals which arise from the transverse processes of the vertebrae, where the ribs are fixed to them, and other portions that pass over one rib, and terminate in the next below it, Albinus calls *Levatores costarum longiores et breviores*.

The portions of the internal that pass over one rib, and are inserted into the next below it, Douglas calls *Costarum depressores proprii Cowperi*.

These portions of both rows assist in raising the ribs in the same manner as the rest of the intercostals.

Supra costales, and *infra costales*, Winsl.

The

The muscles within the thorax are one pair, viz.

TRIANGULARIS or STERNO-COSTALIS,

Arises, fleshy, and a little tendinous, from all the length of the cartilago ensiformis laterally, and from the edge of the lower part of the sternum, from whence its fibres ascend obliquely upwards and outwards.

Inserted, generally by three triangular terminations, into the lower edge of the cartilages of the third, fourth, and fifth ribs, near where these join with the ribs.

Use. To depress these cartilages, and the extremities of the ribs, and consequently to assist in contracting the cavity of the thorax.

This muscle often varies, and is sometimes inserted into the cartilage of the second rib.

C H A P. XXII.

Muscles situated on the Anterior Part of the Neck close to the Vertebrae.

TH E S E consist of one layer formed by four muscles,

1. LONGUS COLLI,

Arises, tendinous and fleshy, from the bodies of the three superior vertebrae of the back laterally; and from the transverse processes of the third, fourth, fifth, and sixth, vertebrae of the neck, near their roots.

Inserted into the forepart of the bodies of all the vertebrae of the neck, by as many small tendons, which are covered with flesh.

Use. To bend the neck gradually forwards, and to one side.

2. RECTUS CAPITIS INTERNUS MAJOR,

Arises, from the anterior points of the transverse processes of the third, fourth, fifth, and sixth vertebrae of the neck, by four distinct beginnings.

Inserted into the cuneiform process of the os occipitis, a little before the condyloid process.

Use. To bend the head forwards,

Rectus anterior longus, Winsl.

3. RECTUS CAPITIS INTERNUS MINOR,

Arises, fleshy, from the forepart of the body of the first vertebra of the neck, opposite to the superior oblique process.

Inserted near the root of the condyloid process of the os occipitis, under, and a little farther outwards than the former muscle.

Use. To nod the head forwards.

Rectus anterior brevis, Winsl.

4. REC-

4. RECTUS CAPITIS LATERALIS,

Arises, fleshy, from the anterior part of the point of the transverse process of the first vertebra of the neck.

Inserted into the os occipitis, opposite to the foramen stylo-mastoidaeum of the temporal bone.

Use. To bend the head a little to one side.

Transversalis anticus primus, Winfl.

C H A P.

C H A P. XXIII.

Muscles situated on the Posterior Part of the Trunk.

TH E S E may be divided into four layers, and a single pair.

The first layer consists of two muscles, which cover the whole posterior part of the trunk.

I. TRAPEZIUS, seu CUCULARIS,

Arises, by a strong round tendon, from the lower part of the protuberance in the middle of the os occipitis behind; and, by a thin membranous tendon, which covers part of the splenius and complexus muscles, from the rough curved line that extends from the protuberance towards the mastoid process

process of the temporal bone; runs down along the nape of the neck, where it seems to arise from its fellow, and covers the spinous processes of the superior vertebrae of the neck, but arises from the spinous processes of the two inferior, and from the spinous processes of all the vertebrae of the back, adhering, tendinous, to its fellow, the whole length of its origin.

Inserted, fleshy, into the posterior half of the clavicle, tendinous and fleshy, into the acromion, and into almost all the spine of the scapula.

Use. Moves the scapula according to the three different directions of its fibres; for the upper descending fibres draw it obliquely upwards, the middle transverse straight fibres draw it directly backwards, and the inferior ascending fibres draw it obliquely downwards and backwards.

N. B. Where it is inseparably united to its fellow in the nape of the neck, it is named *Ligamentum Nuchae*, or *Colli*.

2. LATISSIMUS DORSI,

Arises, by a broad thin tendon, from the posterior part of the spine of the os ilium, from all the spinous processes of the os sacrum and vertebrae of the loins, and from the seven inferior ones of the vertebrae of the back ; also, tendinous and fleshy, from the extremities of the three inferior ribs, a little beyond their cartilages, by as many distinct slips. The inferior fibres ascend obliquely, and the superior run transversely over the inferior angle of the scapula, towards the axilla, where they are all collected, twisted, and folded.

Inserted, by a strong thin tendon, into the inner edge of the groove for lodging the tendon of the long head of the biceps.

Use. To pull the arm backwards and downwards, and to roll the os humeri.

N. B. The insertion of this muscle should not be prosecuted till the muscles of the os humeri,

humeri, to which it belongs, are dissected.

The second layer consists of three pair, two on the back, and one on the neck :

On the back,

1. SERRATUS POSTICUS INFERIOR,

Arises, by a broad thin tendon, in common with that of the latissimus dorsi, from the spinal processes of the two inferior vertebrae of the back, and from the three superior of the loins.

Inserted into the lower edges of the four inferior ribs, at a little distance from their cartilages, by as many distinct fleshy slips.

Use. To depress the ribs into which it is inserted,

2. RHOMBOIDES,

This muscle is divided into two portions, *Rhomboides major*, *Arises*, tendinous, from
the

the spinous processes of the five superior vertebrae of the back.

Inserted into all the basis of the scapula below its spine.

Use. To draw the scapula obliquely upwards, and directly backwards.

2. *Rhomboides minor, Arises*, tendinous, from the spinous processes of the three inferior vertebrae of the neck, and from the ligamentum nuchae.

Inserted into the base of the scapula, opposite to its spine.

Use. To assist the former.

On the neck,

3. SPLENIUS,

Arises, tendinous, from the four superior spinous processes of the vertebrae of the back; tendinous and fleshy, from the five inferior of the neck, and adheres firmly to the ligamentum nuchae. At the third vertebra of the neck, the splenii recede from each

each other, so that part of the complexus muscle is seen.

Inserted, by as many tendons, into the five superior transverse processes of the vertebrae of the neck ; and tendinous and fleshy, into the posterior part of the mastoid process, and into the os occipitis, where it joins with the root of that process.

Use. To bring the head and upper vertebrae of the neck backwards laterally, and, when both act, to pull the head directly backwards.

N. B. Albinus divides this muscle into two, viz. that portion which *arises* from the five inferior spinous processes of the neck, and is *inserted* into the mastoid process and os occipitis, he calls SPLENIUS CAPITIS ; and that portion which *arises* from the third and fourth of the back, and is *inserted* into the five superior transverse processes of the neck, is called by him SPLENIUS COLLI.

The single pair,

SERRATUS SUPERIOR POSTICUS,

Arises, by a broad thin tendon, from the spinous processes of the two last vertebrae of the neck, and the three uppermost of the back.

Inserted into the second, third, fourth, and fifth ribs, by as many fleshy slips.

Use. To elevate the ribs, and dilate the thorax.

The third layer consists of three pair on the back, and three on the neck.

On the back,

I. SPINALIS DORSI,

Arises from the spinous processes of the two uppermost vertebrae of the loins, and the three inferior of the back, by as many tendons.

Inserted into the spinous processes of the nine uppermost vertebrae of the back, except the first, by as many tendons.

Use.

Use. To erect and fix the vertebrae, and to assist in raising the spine.

2. LONGISSIMUS DORSI,

Arises, tendinous without, and fleshy within, from the side, and all the spinous processes of the os sacrum; from the posterior spine of the os ilium; from all the spinous processes, and from the roots of the transverse processes of the vertebrae of the loins.

Inserted into all the transverse processes of the vertebrae of the back, chiefly by small double tendons; also, by a tendinous and fleshy slip, into the lower edge of all the ribs, except the two inferior, at a little distance from their tubercles.

Use. To extend the vertebrae, and to raise and keep the trunk of the body erect.

N. B. From the upper part of this muscle there runs up a round fleshy portion which joins with the cervicalis descendens.

3. SACRO-LUMBALIS,

Arises, in common with the longissimus dorsi.

Inserted into all the ribs, where they begin to be curved forwards, by as many long and thin tendons ; and,

From the upper part of the fix lower ribs arise as many bundles of thin fleshy fibres, which soon terminate in the inner side of this muscle, and are named MUSCULI AD SACRO-LUMBUM ACCESSORII.

Use. To pull the ribs down.

N. B. There is a fleshy slip which runs from the upper part of this muscle into the fourth, fifth, and sixth transverse processes of the vertebrae of the neck, by three distinct tendons ; it is named CERVICALIS DESCENDENS ; and its *use* is to turn the neck obliquely backwards, and to one side.

On

On the neck,

I. COMPLEXUS,

Arises from the transverse processes of the six superior vertebrae of the back, and four inferior of the neck, by as many distinct tendinous origins ; in its ascent it receives a fleshy slip from the spinous process of the first vertebra of the back : From these different origins it runs upwards, and is every where intermixed with tendinous fibres.

Inserted, tendinous and fleshy, into the inferior edge of the protuberance in the middle of the os occipitis, and into a part of the curved line that runs forwards from that protuberance.

Use. To draw the head backwards, and to one side ; and, when both act, to draw the head directly backwards.

N. B. The long portion of this muscle that is situated next the spinous processes, lies more loose, and has a roundish tendon
in

in the middle of it; for which reason Albinus calls it *Biventer cervicis*.

2. TRACHELO-MASTOIDAEUS,

Arises from the transverse processes of the three uppermost vertebrae of the back, and from the five lowermost of the neck, where it is connected to the transversalis cervicis, by as many thin tendons, which unite into a belly, and run up under the splenius.

Inserted into the middle of the posterior side of the mastoid process, by a thin tendon.

Use. To assist the complexus; but it pulls the head more to a side.

Complexus minor, seu Mastoidaeus lateralis, Winsl.

Trachelo-mastoidaeus, seu Capitis par Tertium Fallopii, Dougl.

3. LEVATOR SCAPULAE,

Arises, tendinous and fleshy, from the transverse processes of the five superior vertebrae

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tebrae of the neck, by as many distinct slips, which soon unite to form a muscle that runs downwards and outwards.

Inserted, fleshy, into the superior angle of the scapula.

Use. To pull the scapula upwards, and a little forwards.

Angularis, vulgo Levator proprius, Winsl.

Elevator, seu Musculus patientiae, Dougl.

The fourth layer consists of two pair on the back, two on the posterior part of the neck, four small pair situated immediately below the posterior part of the occiput, and three on the side of the neck.

On the back,

I. SEMI-SPINALIS DORSI,

Arises, from the transverse processes of the seventh, eighth, ninth, and tenth, vertebrae of the back, by as many distinct tendons, which soon grow fleshy, and then become tendinous again, and are

In-

Inserted into the spinous processes of all the vertebrae of the back above the eighth,, and into the lowermost of the neck, by as many tendons.

Use. To extend the spine obliquely backwards.

Semispinalis externus, seu Transverso-spinalis dorsi, Winsl.

2. MULTIFIDUS SPINAE,

Arisēs from the side and spinous processes of the os sacrum, and from the posterior part of the os ilium, where it joins with the sacrum ; from all the oblique and transverse processes of the vertebrae of the loins ; from all the transverse processes of the vertebrae of the back, and from those of the neck, except the three first, by as many distinct tendons, which soon grow fleshy, run in an oblique direction, and are

Inserted, by distinct tendons, into all the spinous processes of the vertebrae of the loins,

loins, of the back, and of the neck, except the first.

Use. When the different portions of this muscle act on one side, they extend the back obliquely, or move it laterally ; but, if they act together on both sides, they extend the vertebrae backwards.

Transverso-spinalis lumborum veteri sacer.

Semispinalis internus, five Transverso-spinalis dorsi.

Semispinalis, five Transverso-spinalis colli, Pars internus, Winfl.

Transversalis lumborum vulgo sacer.

Transversalis dorsi.

Transversalis colli, Dougl.

On the posterior part of the neck,

I. SEMISPINALIS COLLI,

Arises, from the transverse processes of the uppermost six vertebrae of the back, by as

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many

many distinct tendons, ascending obliquely under the complexus.

Inserted into the spinous processes of all the vertebrae of the neck, except the first and the last.

Use. To extend the neck obliquely backwards.

Semispinalis, five *Transverso-spinalis colli*,
Winfl.

Spinalis cervicis, Alb.

Spinalis, Dougl.

2. TRANSVERSALIS COLLI,

Arises from the transverse processes of the five uppermost vertebrae of the back, by as many tendinous and fleshy origins; runs between the trachelo-mastoidaeus, and splenius colli and cervicalis descendens.

Inserted into the transverse processes of all the cervical vertebrae, except the first and the last.

Use.

Use. To turn the neck obliquely backwards, and a little to one side.

Below the posterior part of the occiput,

1. RECTUS CAPITIS POSTICUS MAJOR,

Arises, fleshy, from the external part of the spinous process of the second vertebra of the neck, and grows broader in its ascent, which is not straight, but obliquely outwards.

Inserted, tendinous and fleshy, into the os occipitis, near the rectus capitis lateralis, and the insertion of the obliquus capitis superior.

Use. To pull the head a little backwards.

Rectus major, Winsl. and Dougl.

2. RECTUS CAPITIS POSTICUS MINOR,

Arises, by a narrow beginning, close by its fellow, from a little protuberance in the middle

middle of the back part of the first vertebra of the neck, its outer edge being covered by the rectus major.

Inserted, pretty broad, into the sides of a dimple in the os occipitis, near its foramen magnum.

Use. To assist the rectus major in moving the head a little backwards.

Obliquus minor, Winsl. and Dougl.

3. OBLIQUUS CAPITIS SUPERIOR,

Arises from the transverse process of the first vertebra of the neck.

Inserted, tendinous and fleshy, into the os occipitis behind the back part of the mastoid process of the temporal bone, and under the insertion of the complexus muscle.

Use. To turn the head obliquely to one side.

Obliquus major, Winsl.

Obliquus superior, Dougl.

4. OBLIQUUS CAPITIS INFERIOR,

Arises, fleshy, from the spinous process of the second vertebra of the neck, its whole length, and, forming a thick fleshy belly, is

Inserted into the transverse process of the first vertebra of the neck.

Use. To assist the former, by turning the head more to one side; and both serve to give a gentle rotatory motion to the head.

On the side of the neck,

1. SCALENUS ANTICUS,

Arises from the fourth, fifth, and sixth, transverse processes of the vertebrae of the neck, by as many tendons.

Inserted, tendinous and fleshy, into the upper side of the first rib, near its cartilage.

Scalenus prior, Alb.

Anterior portion of the first scalenus, Winfl.

First scalenus, Dougl.

2. SCA-

2. SCALENUS MEDIUS,

Arises, from all the transverse processes of the vertebrae of the neck, by as many strong tendons; the nerves to the superior extremity pass between it and the former.

Inserted into the upper and outer part of the first rib, for some way back.

Posterior portion of the first scalenus, Winsl.
Second scalenus, Dougl.

3. SCALENUS POSTICUS,

Arises from the fifth and sixth transverse processes of the vertebrae of the neck.

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Inserted into the upper edge of the first rib, not far from the spine.

Posterior portion of the second scalenus,
 Winsl.

Third scalenus, Dougl.

Use of the three scaleni: To elevate the ribs, and to dilate the thorax; or, when
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the ribs are fixed, to bend the neck to one side.

There are a number of small muscles situated between the processes of the vertebrae, which are accordingly named

1. INTERSPINALES COLLI,

The space between the spinous processes of the vertebrae of the neck, most of which are bifurcated, is filled up with fleshy portions, which

Arise, double, from the spinous process of the inferior vertebrae of the neck, and ascend to be

Inserted, in the same manner, into the superior process. They are five in number.

Use. To draw these processes to each other.

2. INTERTRANSVERSALES COLLI,

They begin from the transverse process of the first vertebra of the back, and fill up the spaces between the transverse processes of
the

the vertebrae of the neck, which are likewise bifurcated; and, consequently, there are six distinct double muscles, which

Arise from the inferior transverse process of each vertebra of the neck, and first of the back, and are

Inserted into the superior transverse processes.

Use. To draw these processes towards each other, and turn the neck a little to one side.

3. INTERSPINALES DORSI,

These are small tendons which fill up the spaces between the spinous processes of the vertebrae of the back, and serve to connect them to each other.

4. INTERTRANSVERSALES DORSI,

Are small tendons which connect the transverse processes of the back to each other, in the same manner as those of the neck.

5. IN-

5. INTERSPINALES LUMBORUM,

Are small tendons, which connect the spinous processes of the lumbar vertebrae to each other.

6. INTERTRANSVERSALES LUMBORUM,

Are four distinct small bundles of flesh, which fill up the spaces between the transverse processes of the vertebrae of the loins, and serve to draw them towards each other.

C H A P. XXIV.

Muscles of the Superior Extremities.

TH E S E may be divided into the muscles that are situated on the *scapula*, on the *os humeri*, on the *cubit* or *fore-arm*, and on the *hand*.

Muscles situated on the *scapula*,

These are called *muscles* of the *os humeri*, and are three *behind*, one along its *inferior costa*, two *before*, and one *beneath* it.

Behind,

I. SUPRA SPINATUS,

Arises, fleshy, from all that part of the base of the *scapula* that is above its spine ;
also

also from the spine and superior costa; passes under the acromion, and adheres to the capsular ligament of the os humeri.

Inserted, tendinous, into that part of the protuberance on the head of the os humeri that is next the groove for lodging the tendon of the long head of the biceps.

Use. To raise the arm upwards, and, at the same time, to pull the capsular ligament from between the bones, that it may not be pinched.

2. INFRASPINATUS,

Arises, fleshy, from all that part of the base of the scapula that is between its spine and inferior angle, from the spine, as far as the cervix of the scapula, and from the edge of all the fossa that runs above its spine; the fibres ascend and descend obliquely towards a tendon in the middle of the muscle, which runs forwards, and adheres to the capsular ligament.

In-

Inserted, by a thick and short tendon, into the upper and middle part of the protuberance on the head of the os humeri.

Use. To pull the arm upwards and backwards, and to pull the ligament from between the bones.

N. B. These two muscles are covered with a tendinous membrane, from which a number of their fleshy fibres arise. It serves to strengthen their actions, and keeps them from swelling too much outwardly when in action.

3. TERES MINOR,

Arises, fleshy, from all the round edge of the inferior costa of the scapula, and runs forwards along the inferior edge of the infraspinatus muscle, and adheres to the ligament.

Inserted, tendinous, into the outer part of the protuberance on the head of the os humeri,

meri, a little below the termination of the last named muscle.

Use. To assist the former, and to bring the arm more directly backwards, and to pull the ligament from between the bones.

Along the inferior costa of the scapula,

TERES MAJOR,

Arises, fleshy, from the inferior angle of the scapula, and from all that portion of its inferior costa that is rough and thicker than the rest; its fleshy fibres are continued over part of the infraspinatus muscle, to which they firmly adhere.

Inserted, by a broad, short, and thin tendon, into the ridge at the inner side of the groove for lodging the tendon of the long head of the biceps, along with the latissimus dorsi.

Use. To move the arm backwards and downwards, and to roll the head of the os humeri.

The

The two before the scapula,

1. DELTOIDES,

Arises, fleshy, from all the posterior part of the clavicle that the pectoralis major does not possess; tendinous and fleshy, from the acromion, and lower margin of almost the whole spine of the scapula opposite to the insertion of the cucularis muscle; from these origins it runs in three different directions, i. e. from the clavicle outwards, from the spine of the scapula forwards, and from the acromion straight downwards, and is composed of a number of fasciculi, which form a strong fleshy muscle that covers the anterior part of the joint of the os humeri.

Inserted, tendinous, into a rough protuberance in the forepart of the os humeri, near its middle, where the fibres of this muscle intermix with some part of the brachialis.

Use.

Use. To pull the arm directly upwards, and a little forwards or backwards, according to the different directions of its fibres.

2. CORACO-BRACHIALIS,

Arises, tendinous and fleshy, from the forepart of the coracoid process of the scapula, adhering, in its descent, to the short head of the biceps.

Inserted, tendinous and fleshy, about the middle of the internal part of the os humeri near the origin of the third head of the triceps called *brachialis externus*, where it sends down a thin tendinous expansion to the internal condyle of the os humeri.

Use. To raise the arm upwards.

N. B. There passes a *nerve* through this muscle, called *Musculo-cutaneus*.

The one beneath the scapula,

SUBSCAPULARIS,

Arises, fleshy, from all the base of the scapula internally, and from its superior and inferior

rior costae, being composed of a number of tendinous and fleshy fasciculi, which make prints on the bone; they all join together, fill up the hollow of the scapula, and pass over the joint, adhering to the capsular ligament.

Inserted, tendinous, into the upper part of the internal protuberance at the head of the os humeri.

Use. To bring the arm inwards, and roll it towards the ribs.

C H A P. XXV.

Muscles situated on the Os Humeri.

TH E S E are called

Muscles of the Cubit or Fore-arm.

They consist of two before, and two behind.

Before,

I. BICEPS FLEXOR CUBITI,

Arises, by two heads, the first and outermost, called *longus*, tendinous from the upper edge of the glenoid cavity of the scapula, passes over the head of the os humeri within the joint, and, in its descent without the joint, it is inclosed in a groove near the head of the os humeri, by a membranous ligament that proceeds from the capsular liga-

ment and adjacent tendons. The second, or innermost head, called *brevis*, arises, tendinous and fleshy, from the coracoid process of the scapula, in common with the coraco-brachialis muscle. A little below the middle of the forepart of the os humeri, these heads unite.

Inserted, by a strong roundish tendon, into the tubercle on the upper end of the radius internally.

Use. To bend the fore-arm, and to turn it supine.

N. B. At the bending of the elbow, where it begins to grow tendinous, it sends off an aponeurosis, which covers all the muscles on the inside of the fore-arm, and joins with another tendinous membrane, which is sent off from the triceps extensor cubiti, and covers all the muscles on the outside of the fore-arm, and a number of the fibres, from opposite sides, decussate each other. It serves to strengthen the muscles, by keeping them from swelling too much outwardly, when in action, and a number

of the fleshy fibres take their origin from it.

Biceps brachii, Alb.

Coraco-radialis, seu *biceps*. Winsl.

Biceps internus, Dougl.

2. BRACHIALIS INTERNUS,

Arises, fleshy, from the middle of the os humeri, at each side of the insertion of the deltoid muscle, covering all the inferior and forepart of this bone, runs over the joint, and adheres firmly to the ligament.

Inserted, by a strong short tendon, into the coronoid process of the ulna.

Use. To bend the fore-arm.

Brachialis, Winsl.

Behind,

1. TRICEPS EXTENSOR CUBITI,

Arises, by three heads, the first called *longus*, pretty broad and tendinous, from the inferior costa of the scapula, near its
cer-

cervix. The second head, called *brevis*, arises by an acute, tendinous, and fleshy beginning, from the os humeri, a little below its head, outwardly. The third, called *brachialis externus*, arises by an acute beginning, from the os humeri, near the insertion of the *teres major*; upon the posterior side of the os humeri these three heads unite.

Inserted into the upper and external part of the process of the ulna, called *olecranon*, and partly into the condyles of the os humeri, adhering firmly to the ligament.

Use. To extend the arm.

*Anconaeus major, Anconaeus externus, and
Anconaeus internus, Winsl.*

*Biceps externus, and Brachialis externus,
Dougl.*

2. ANCONAEUS,

Arises, tendinous, from the posterior part of the external condyle of the os humeri; it soon grows fleshy, and is continued from the third head of the triceps.

In-

Inserted, fleshy, and thin, into a ridge on the lateral part of the ulna, being continued a little way below the olecranon, and covered with a tendinous membrane.

Use. To assist in extending the fore-arm.

Anconaeus minor, Winsl.

Anconaeus, vel *Cubitalis Riolani*, Dougl.

CHAP.

C H A P. XXVI.

Muscles situated on the Cubit, or Fore-arm.

TH E S E may be divided into *three classes*; *first*, flexors and extensors of the whole *hand*; *second*, flexors and extensors of the *fingers*; and, *third*, supinators and pronators, or those that roll the *radius* on the *ulna*.

First class consists of three flexors, and three extensors.

Flexors,

I. PALMARIS LONGUS,

Arises, tendinous, from the internal condyle of the os humeri, soon grows fleshy, and, after a short progress, sends off a long slender tendon.

In-

Inserted into the ligamentum carpi annulare, and into the tendinous membrane that is expanded on the palm of the hand.

Use. To bend the hand, and to stretch the membrane that is expanded on the palm.

Ulnaris gracilis, Winsl.

N. B. This muscle is sometimes wanting; but the aponeurosis palmaris is always to be found, and a small muscle named

PALMARIS BREVIS,

Aries, by small disgregated fleshy fibres, from the skin and fat that covers the abductor minimi digiti, and from the os pisiforme.

Inserted into the ligamentum carpi annulare, and tendinous membrane that is expanded on the palm of the hand.

Use. To assist in contracting the palm of the hand.

Palmaris cutaneus, Winsl.

2. FLEXOR CARPI RADIALIS,

Arises, tendinous and fleshy, from the internal condyle of the os humeri, and from the anterior part of the upper end of the ulna, where it firmly adheres to the pronator radii teres.

Inserted, by a flat tendon, into the fore and upper part of the metacarpal bone that sustains the fore-finger, after running thro' a fossa in the os trapezium.

Use. To bend the wrist, together with the hand.

Radialis internus, Alb. and Winsl.

3. FLEXOR CARPI ULNARIS.

Arises, tendinous, from the internal condyle of the os humeri. It has likewise a small fleshy beginning from the outer side of the olecranon, between which and the condyle, the ulnar nerve passes to the fore-arm, and a number of its fleshy fibres arise from
the

the tendinous membrane which covers the fore-arm.

Inserted, by a short strong tendon, into the os pisiforme ; at a little distance from its insertion, a small ligament is sent off to the metacarpal bone that sustains the little finger.

Use. To assist the former in bending the hand.

Ulnaris internus, Alb. and Winsl.

Extensors,

I. EXTENSOR CARPI RADIALIS LONGIOR,

Arises, broad, thin, and fleshy, immediately below the supinator radii longus, from the lower part of the external ridge of the os humeri, above its external condyle.

Inserted, by a round tendon, into the fore-part of the metacarpal bone that sustains the fore-finger.

Use. To extend and bring the hand backwards.

Radialis externus longior, Alb.

Radialis externus primus, Winsl.

2. EXTENSOR CARPI RADIALIS BRE-
VIOR,

Arises, tendinous, from the external condyle of the os humeri, and from the ligament that connects the radius to it, and runs along the outside of the radius.

Inserted, by a round tendon, into the metacarpal bone that sustains the middle finger.

Use. To assist the last mentioned muscle,

Radialis externus brevior, Alb.

Radialis secundus, Winsl.

EXTENSOR CARPI ULNARIS,

Arises, tendinous, from the external condyle of the os humeri, and, in its progress,
fleshy.

fleshy from the middle of the ulna, where it passes over it. Its round tendon is inclosed by a membranous sheath, in a groove which is situated at the extremity of the ulna.

Inserted, by its round tendon, into the forepart of the metacarpal bone that sustains the little finger.

Use. To assist the former in extending the hand.

Ulnaris internus, Alb. and Winsl.

Second Class.

The flexors and extensors of the four middle fingers are, two long, and one small flexor to each finger, and one extensor.

I. FLEXOR SUBLIMUS PERFORATUS,

Arises, tendinous and fleshy, from the internal condyle of the os humeri; tendi-
nous

nous from the coronoid process of the ulna, near the edge of the cavity that receives the head of the radius; fleshy from the tubercle of the radius; and membranous and fleshy from the middle of the forepart of the radius, where the flexor pollicis longus arises. Its fleshy belly sends off four round tendons before it passes under the ligament of the wrist.

Inserted into the forepart of the second bone of each finger, being near the extremity of the first bone, divided for the passage of the perforans. Under the ligamentum carpi annulare, they are connected to one another, and to the tendons of the flexor profundus, by slimy membranes, named *bursae mucosae*.

Sublimus, Alb.

Perforatus, Dougl.

2. FLEXOR PROFUNDUS PERFORANS,

Arises, fleshy, from the external side, and upper part of the ulna, for some way downwards,

wards, and from a large share of the interosseous ligament. It splits into four tendons, a little before it passes under the ligamentum carpi annulare, and these pass through the flits in the tendons of the flexor sublimis.

Inserted into the third or last bone of all the four fingers.

Use. To bend the last joint of the fingers.

Profundus, Alb.

Perforans, Dougl.

The four small flexors are named

LUMBRICALES,

Arise, thin and fleshy, from the outside of the tendons of the flexor profundus, a little beyond the ligamentum carpi annulare.

Inserted, by long slender tendons, into the sides of the broad tendons of the interossei

ossei muscles, about the middle of the first joint.

Use. To assist in bending the fingers, by increasing their flexion, while the long flexors are in full action.

Extensors,

EXTENSOR DIGITORUM COMMUNIS,

Arises, by an acute, tendinous, and fleshy beginning, from the external condyle of the os humeri, where it adheres to the supinator radii brevis. Before it passes under the ligamentum carpi annulare externum, it splits into four tendons, some of which may be divided into many smaller, and about the forepart of the metacarpal bones, they remit tendinous filaments to each other.

Inserted into the posterior part of all the four fingers, by a tendinous expansion.

Use. To extend all the joints of the fingers.

Third

Third Class,

Consists of four muscles, viz. two *supinators*, and two *pronators*.

Supinators,

1. SUPINATOR RADII LONGUS,

Arises, by an acute and fleshy origin, from the external ridge of the os humeri, above the external condyle, near as far up as the middle of that bone.

Inserted into the external part of the inferior extremity of the radius.

Use. To roll the radius outwards, and consequently the palm of the hand upwards,

Supinator longus, Alb. Winsl. and Dougl.

2. SUPINATOR RADII BREVIS,

Arises, tendinous, from the external condyle of the os humeri; tendinous and fleshy,
from

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from the external and upper part of the ulna, and adheres firmly to the ligament that joins these two bones.

Inserted into the head and tubercle of the radius near the insertion of the biceps.

Use. To roll the radius outwards, and so bring the hand supine.

Pronators,

1 PRONATOR RADII TERES,

Arises, fleshy, from the internal condyle of the os humeri, and tendinous from the coronoid process of the ulna.

Inserted, thin, tendinous, and fleshy, into the middle of the outer edge of the radius.

Use. To roll the radius, together with the hand, inwards.

2. PRONATOR RADII QUADRATUS,

Arises, broad, tendinous, and fleshy, from the lower and inner part of the ulna; the fibres run transversely, to be

In-

Inserted into the external and lower part of the radius, opposite to its origin.

Use. To turn the radius, together with the hand, inwards.

U C H A P.

C H A P. XXVII.

Muscles situated on the Hand.

TH E S E may be divided into four classes, viz. muscles of the *thumb*, *fore-finger*, *little finger*, and *metacarpal bones*.

Muscles of the Thumb.

These consist of *three flexors*, *three extensors*, *one abductor*, and *one adductor*.

Flexors,

1. FLEXOR LONGUS POLLICIS MANUS,

Arises, by [an acute fleshy beginning, from the upper part of the radius, immediately below its tubercle, and is continued down for some space on the forepart of this bone.

bone. It has likewise another origin from the internal condyle of the os humeri, which forms a distinct fleshy slip that terminates near the origin of this muscle.

Inserted into the last joint of the thumb, after having passed its tendon under the ligament of the wrist.

Use. To bend the last joint of the thumb.

Flexor tertii internodii, Dougl.

2. FLEXOR BREVIS POLLICIS MANUS,

Arises, from the ossa trapezoides, magnum, and unciforme of the carpus, and is divided into two portions by the flexor pollicis longus.

Inserted into the ossa sesamoidea and second joint of the thumb.

Use. To bend the second joint of the thumb.

Flexor secundi internodii, Dougl.

3. OPPONENS POLLICIS,

Arises, fleshy, from the os trapezium and ligamentum carpi annulare, lying under the abductor pollicis.

Inserted, tendinous and fleshy, into the anterior part of the metacarpal bone of the thumb.

Use. To bring the thumb inwards, opposite to the other fingers.

Flexor primi internodii, Dougl.

Extensors,

1. EXTENSOR OSSIS METACARPI POLLICIS MANUS,

Arises, fleshy, from the middle and external part of the ulna, immediately below the insertion of the anconaeus muscle, from the external part of the middle of the radius, and from the interosseous ligament.

Inserted, generally by two tendons, into the os trapezium, and upper part of the
meta-

metacarpal bone of the thumb, and often joins with the abductor pollicis.

Use. To extend the thumb outwardly.

Abductor longus pollicis manus, Alb.

Extensor primi internodii, Dougl.

2. EXTENSOR PRIMI INTERNODII,

Arises, fleshy, from the extenal part of the radius near the former muscle, and from the interosseous ligament.

Inserted, tendinous, into the anterior part of the second bone of the thumb, and part of it may be traced as far as the first bone.

Use. To extend the second bone of the thumb obliquely outwards.

Extensor minor pollicis manus, Alb.

This and the preceding muscle is called

Extensor pollicis primus, Winsl.

3. EXTENSOR SECUNDI INTERNODII,

Arises, by an acute, tendinous, and fleshy beginning, from the ulna, a little above its
in-

inferior extremity, and from the ligamentum carpi annulare; its tendon runs thro' a small groove at the inferior extremity of the radius.

Inserted into the last bone of the thumb, 1

Use. To extend the last joint, with the thumb, obliquely backwards.

Extensor major pollicis manus, Alb.

Extensor pollicis secundus, Winsl.

ABDUCTOR POLLICIS MANUS,

Arises, by a broad, tendinous, and fleshy beginning, from the ligamentum carpi annulare, and from the os trapezium.

Inserted, tendinous, into the second bone of the thumb.

Use. To draw the thumb from the fingers.

N. B. Albinus names the inner portion of this muscle *abductor brevis alter*.

Abductor, Thenar Riolani, Dougl.

AD-

ADDUCTOR POLLICIS MANUS,

Arises, fleshy, from almost the whole length of the metacarpal bone that sustains the middle finger; from thence its fibres are collected together.

Inserted, tendinous, into the posterior part of the second bone of the thumb.

Use. To pull the thumb towards the fingers.

Adductor ad minimum digitum, Dougl.

Fore-finger,

INDICATOR,

Arises, by an acute fleshy beginning, from the middle of the posterior part of the ulna; its tendon passes under the same ligament with the extensor digitorum communis, with part of which it is

In-

Inserted into the posterior part of the fore-finger.

Extensor secundi internodii indicis proprius, vulgo indicator, Dougl.

ABDUCTOR INDICIS MANUS,

Arises, from the os trapezium, and from the superior part and outside of the metacarpal bone of the thumb.

Inserted, by a short tendon, into the side of the posterior part of the first joint of the fore-finger next the thumb.

Use. To bring the fore-finger towards the thumb.

Semi-interosseus, Winsl.

Little-finger,

ABDUCTOR MINIMI DIGITI MANUS,

Arises, fleshy, from the os pisiforme, and from that part of the ligamentum carpi annulare next it.

In-

Inserted, tendinous, into the posterior part of the first joint of the little finger laterally.

Use. To extend and draw this finger from the rest.

Hypothenar minor, Winfl.

Extensor tertii internodii minimi digiti,

Dougl.

ADDUCTOR MINIMI DIGITI MANUS,

Arises, fleshy, from the thin edge of the os unciforme, and from that part of the ligament of the wrist next it.

Inserted, tendinous, into the side, and anterior part of the metacarpal bone of this finger.

Use. To bend and bring this finger towards the rest.

Metacarpaeus, Winfl.

Flexor primi internodii minimi digiti,

Dougl.

FLEXOR PARVUS MINIMI DIGITI,

Arises, fleshy, from the internal side of the os unciforme, and from the ligament of the wrist which joins with that bone.

Inserted, by a roundish tendon, into the anterior part of the first bone of this finger.

Use. To bend the little finger, and assist the adductor.

Abductor minimi digiti, Hypothenar Riolani, Dougl.

Between the metacarpal bones, there are four internal, and three external muscles, named *interossei*.

Interossei interni,

I. PRIOR INDIGITS,

Arises, tendinous and fleshy, from the posterior and inner part of the metacarpal bone that sustains the fore-finger.

In-

Inserted into the inside of that part of the tendinous expansion from the extensor digitorum communis, which covers the posterior part of the fore-finger.

Use. To draw the fore-finger inwards, towards the thumb, and extend it obliquely.

Extensor tertii internodii indicis, Dougl.

2. POSTERIOR INDICIS,

Arises, tendinous and fleshy, from the root and outer part of the metacarpal bone that sustains the fore-finger.

Inserted into the outside of the tendinous expansion which is sent off from the extensor digitorum communis, along the posterior part of the fore-finger.

Use. To extend the fore-finger obliquely, and to draw it outwards.

First interosseus, Dougl.

3. PRIOR

3. PRIOR ANNULARIS,

Arises from the root of the inside of the metacarpal bone that sustains the ring finger.

Inserted into the inside of the tendinous expansion of the extensor digitorum communis which covers the ring-finger.

Use. To extend and pull the ring-finger towards the thumb.

Fourth interosseus, Dougl.

4. INTEROSSEUS ANNULARIS,

Arises from the root and inner side of the metacarpal bone of the little finger, and is

Inserted into the inside of the tendinous expansion of the extensor digitorum communis, which covers the posterior part of the little finger.

Use.

Use. To extend and draw the little finger inwards.

Sixth interosseus, Dougl.

Interossei externi, seu bicipites.

I. PRIOR MEDII,

Arises, by two origins, from the roots of the metacarpal bones that sustain the fore and middle fingers externally, and next each other : Runs along the inside of the middle finger ; and, being conspicuous on both sides of the hand, is

Inserted into the inside of the tendinous expansion from the extensor digitorum communis, which covers the outside of the middle finger.

Use. To extend, and to draw the fore-finger inwards.

Second interosseus, Dougl.

2. POSTERIOR MEDII,

Arises, by two origins, from the roots of the metacarpal bones, next each other, that sustain the middle and ring-fingers.

Inserted into the outside of the tendinous expansion from the extensor digitorum communis, which runs along the posterior part of the middle finger.

Use. To extend and draw the middle finger outwards.

Third interosseus, Dougl.

3. POSTERIOR ANNULARIS,

Arises, by two origins, from the roots of the metacarpal bones that sustain the ring and little fingers next each other.

Inserted into the outside of the tendinous expansion of the extensor digitorum communis, which runs along the posterior part of the ring-finger.

Use.

Use. To extend, and draw the ring-finger outwards.

Fifth interosseus, Dougl.

N. B. The internal interossei are only conspicuous on the palm of the hand; but the external are apparent on both the palm and back of the hand.

CHAP.

C H A P. XXVIII.

Muscles of the Inferior Extremity.

TH E S E may be divided into the muscles situated on the *outside* of the *Pelvis*, on the *Thigh*, on the *Leg*, and on the *Foot*.

Muscles on the outside of the *Pelvis*, which are called *Muscles of the Thigh*.

These are composed of *one layer before*, and *three layers behind*.

The layer before consists of five muscles ;

- | | |
|----------------------|------------------|
| 1. Psoas Magnus. | } These were de- |
| 2. Iliacus Internus. | |

3. PECTINALIS,

*Aris*es, broad and fleshy, from the upper and anterior part of the os pubis or pectinis,
imme-

immediately above the foramen thyroideum.

Inserted into the anterior and upper part of the linea aspera of the os femoris, a little below the trochanter minor, by a flat and short tendon.

Use. To bring the thigh upwards and inwards.

Pectinaeus, Alb.

4. TRICEPS ADDUCTOR FEMORIS,

Under this appellation are comprehended three distinct muscles;

1. ADDUCTOR LONGUS FEMORIS,

Arises, by a pretty strong roundish tendon, from the upper and anterior part of the os pubis next the pectinalis, above the gracilis.

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Inserted, tendinous, near the middle of the posterior part of the linea aspera, being continued for some way down.

Adductor femoris primus, Dougl.

Triceps primus, Winsl.

2. ADDUCTOR BREVIS FEMORIS,

Arises, tendinous, from the os pubis near its joining with the opposite os pubis, immediately under the origin of the gracilis.

Inserted, tendinous and fleshy, into the anterior and upper part of the linea aspera, from a little below the trochanter minor, to the beginning of the insertion of the adductor longus.

Adductor femoris secundus, Dougl.

Triceps secundus, Winsl.

3. ADDUCTOR MAGNUS FEMORIS,

Arises, a little lower down than the former, near the symphysis of the ossa pubis;

ten-

tendinous and fleshy, from the tuberosity of the os ischium ; the outer fibres run obliquely outwards and downwards, the inner obliquely downwards.

Inserted into almost the whole length of the linea aspera, into a ridge above the internal condyle of the os femoris, and, by a roundish long tendon, into the upper part of that condyle, a little above which the femoral artery takes a spiral turn towards the ham.

Use of these three muscles, or triceps. To bring the thigh inwards and upwards, according to the different directions of their fibres.

Adductor femoris tertius, and,

Adductor femoris quartus, Dougl.

Triceps tertius, Winsl.

5. OBTURATOR EXTERNUS,

Arises, fleshy, from the lower part of the os pubis and ischium, furrounds the foramen
thy-

thyroideum, a number of its fibres, arising from the membrane which fills up that foramen, are collected like rays towards a center, and pass outwards round the root of the cervix of the os femoris.

Inserted, by a strong tendon, into the cavity at the root of the trochanter major.

Use. To roll the thigh-bone obliquely outwards.

Behind,

First Layer,

GLUTAEUS MAXIMUS,

Arises, fleshy, from the posterior part of the spine of the os ilium, a little higher up than the joining of the ilium with the os sacrum; from the whole external side of the os sacrum, below the posterior spinous process of the os ilium; from the posterior sacro-ischiatic ligament, over which part of the inferior edge of this muscle hangs in a folded manner. All the fleshy fibres run obliquely forwards, and a little downwards,

to

to form a thick broad muscle, which is divided into a number of strong fasciculi. The upper part of it covers almost the whole of the trochanter major, between which and the tendon of this muscle there is a large bursa mucosa, and where it is inseparably joined to the broad tendon of the *tensor vaginae femoris*.

Inserted, by a strong, thick, and broad tendon, into the upper and outer part of the linea aspera, which is continued from the trochanter major, for some way downwards.

Use. To extend the thigh, by pulling it directly backwards, and a little outwards.

Glutaeus magnus, Alb.

Glutaeus major, Cowp.

Second Layer,

GLUTAEUS MEDIUS,

Arises, fleshy, from the anterior superior spinous process of the os ilium, and from all
the

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the outer edge of the spine of the ilium, except its posterior part, where it arises from the dorsum of that bone.

Inserted, by a broad tendon, into the outer and posterior part of the trochanter major.

Use. To assist the glutaeus maximus.

N. B. The anterior and upper part of this muscle is covered by a thin tendinous membrane, from which a number of its fleshy fibres arise, and joins with the broad tendons of the glutaeus maximus, tensor vaginae femoris, and latissimus dorsi.

Third Layer consists of four muscles.

I. GLUTAEUS MINIMUS,

Arises, fleshy, from a ridge that is continued from the superior anterior spinous process of the os ilium, and from the middle of the dorsum of that bone, as far back as its great notch.

Inserted, by a strong tendon, into the fore and upper part of the trochanter major.

Use. To assist the two former in pulling the thigh outwards.

Glutaeus minor, Alb.

2. PYRIFORMIS,

Arises, within the pelvis, by three tendinous and fleshy origins, from the second, third, and fourth pieces of the os sacrum; from thence growing gradually narrower, it passes out of the pelvis along with the posterior crural nerve, below the notch in the posterior part of the os ilium, where it receives a few fleshy fibres.

Inserted, by a roundish tendon, into the upper part of the cavity at the root of the trochanter major.

Use. To move the thigh a little upwards, and roll it outwards.

Pyriformis, seu *Iliacus externus*, Dougl.

3. GEMINI,

Arise, by two distinct origins ; the superior, from the spinous process, and the inferior, from the tuberosity of the os ischium ; also from the posterior sacro-ischiatic ligament. They are both united by a tendinous and fleshy membrane, and form a purse for the tendon of the obturator internus muscle, which was formerly described.

Inserted, tendinous and fleshy, into the cavity at the root of the trochanter major, on each side of the tendon of the obturator internus, to which they firmly adhere.

Use. To roll the thigh outwards, and to preserve the tendon of the obturator internus from being hurt by the hardness of that part of the ischium over which it passes ; also, to hinder it from starting out of its place, while the muscle is in action.

Gemelli, Winsl.

4. QUADRATUS FEMORIS,

Arises, tendinous and fleshy, from the outside of the tuberosity of the os ischium, and, running transversely, is

Inserted, fleshy, into a rough ridge, on the outside of the trochanter major, being continued as low down as the trochanter minor.

Use. To roll the thigh outwards.

Z C H A P.

C H A P. XXIX.

Muscles situated on the Thigh.

TH E S E are called *Muscles* of the *Leg*, and consist of *one*, on the *outside*; *two*, on the *inside*; *four*, *before*; and, *four* *behind*.

Previous to the description of the muscles that are situated on the thigh and leg, it is necessary to take notice of a broad tendinous fascia or sheath, which is sent off from the tendons of the glutaei and adjacent muscles.

It is a strong thick membrane on the outside of the thigh and leg; but, towards the inside of both, it gradually turns thinner, and has rather the appearance of cellular substance, than a tendinous membrane. A little below the trachanter major, it is firmly fixed to the linea aspera, and, farther down,

to that part of the head of the tibia that is next the fibula ; where it sends off the tendinous expansion along the outside of the leg.

It serves to strengthen the action of the muscles, by keeping them firm in their proper places while in action, particularly the tendons that pass over the joints, where this membrane is thickest, and it gives origin to a number of the fleshy fibres of the muscles.

Outside,

TENSOR VAGINAE FEMORIS,

Arises, by a narrow, tendinous, and fleshy beginning, from the external part of the anterior superior spinous process of the os ilium.

Inserted, a little below the trochanter major, into a doubling of the membranous fascia which covers the outside of the thigh.

Use. To stretch the membranous fascia, to extend the leg, and to turn it a little outwards.

Musculus Aponeurosis, vel Fasciae latae,
Winfl.

Inside.

Inside.

1. SARTORIUS,

Arises, tendinous, from the anterior superior spinous process of the os ilium, soon grows fleshy, runs down for some space upon the rectus, and, going obliquely inwards, it passes over the vastus internus, and, about the middle of the os femoris, over part of the triceps, it runs down further between the tendon of the abductor magnus, and that of the gracilis muscle.

Inserted, tendinous, into the inferior part of the tubercle of the tibia, and upper part of its spine.

Use. To move the leg obliquely inwards, or to bring one leg and thigh cross the other.

2. GRACILIS,

Arises, by a thin tendon, from the os pubis near the symphysis of these two bones; soon grows fleshy, and, descending by the inside of the thigh, is

In-

Inserted, tendinous, into the tibia near the sartorius.

Use. To bend the thigh and leg inwards.

Gracilis internus, five *Rectus internus*,
Winfl.

Before.

I. RECTUS,

Arises, fleshy, from the inferior anterior spinous process of the os ilium, and tendinous from the dorsum of the ilium, a little above the acetabulum; runs down over the anterior part of the cervix of the os femoris, the fibres not being straight, but running down like the plumage of a feather obliquely outwards and inwards, from a tendon in the middle.

Inserted, tendinous, into the upper part of the patella, which tendon grows thin over the anterior part of this bone, and terminates in a strong thick tendon, which is sent off from the inferior part of the patella,
and

and inserted into the tubercle of the tibia.

Use. To extend the leg, and in a powerful manner, by the intervention of the patella, like a pulley.

Rectus, five *Gracilis anterior*, Winfl.

2. VASTUS EXTERNUS,

Arises, broad, tendinous, and fleshy, from the root of the trochanter major, and upper part of the linea aspera, its origin being continued from near the insertion of the gluteus minimus, the whole length of the linea aspera, by fleshy fibres which run obliquely forwards to a middle tendon, where they terminate.

Inserted into a large share of the upper part of the patella.

Use. To extend the leg.

3. VAS-

2. VASTUS INTERNUS,

Arises, tendinous and fleshy, from between the forepart of the os femoris and root of the trochanter minor, and from almost all the inside of the linea aspera, by fibres running obliquely forwards and downwards.

Inserted, tendinous, into the upper and inside of the patella, continuing fleshy lower than the vastus externus.

Use. To extend the leg.

4. CRURAEUS,

Arises, fleshy, from between the two trochanters of the os femoris, but nearer the minor, and firmly adhering to most of the forepart of the os femoris, and to the capsular ligament of the knee.

Inserted, tendinous, into the upper part of the patella, under the rectus.

Use. To assist in the extension of the leg.

Cruralis, Alb.

N. B. These four muscles *before*, being inserted into the patella, have the same effect upon the leg, as if they were immediately inserted into it, by means of the strong tendon, which is sent off from the inferior part of the patella to the tibia.

Behind.

I. SEMITENDINOSUS,

Arises, tendinous and fleshy, in common with the long head of the biceps, from the posterior part of the tuberosity of the os ischium, and sending down a long roundish tendon, which ends flat, is

Inserted into the inside of the ridge of the tibia, a little below its tubercle.

Use. To bend the leg backwards, and a little inwards.

Seminervosus, Winsl. and Dougl.

2. SEMIMEMBRANOSUS,

Arises, tendinous, from the upper and posterior part of the tuberosity of the os ischium, sends down a broad flat tendon, which ends in a fleshy belly, and, in its descent, runs under the long head of the biceps, between which and the semitendinosus it runs down the back side of the thigh.

Inserted, tendinous, into the superior and back part of the head of the tibia.

Use. To bend the leg, and bring it directly backwards.

N. B. The two last form what is called the *inner ham-string*.

3. BICEPS FLEXOR CRURIS,

Arises by two distinct heads ; the first, called *longus*, arises, in common with the semitendinosus, from the upper and posterior part of the tuberosity of the os ischium. The second, called *brevis*, arises from the linea aspera, a little below the termination

of the glutaeus maximus, by a fleshy acute beginning, which soon grows broader as it descends to join with the first head, a little above the external condyle of the os femoris.

Inserted, by a strong tendon, into the upper part of the head of the fibula.

Use. To bend the leg.

Biceps cruris, Alb.

Biceps, Winsl. and Dougl.

N. B. This muscle forms what is called the *outer ham-string*, and between it and the inner, the nervus popliteus, and arteria poplitea, are situated in their descent to the leg.

4. POPLITAEUS,

Arises, by a round tendon, from the lower and back part of the external condyle of the os femoris; then running over the ligament that involves the joint, and, firmly adhering to it, and part of the semilunar
car-

cartilage; as it runs over the joint, it becomes fleshy, and the fibres run obliquely inwards, being covered with a thin tendinous membrane.

Inserted, broad, thin, and fleshy, into a ridge at the upper and internal edge of the tibia, a little below its head.

Use. To move the leg obliquely outwards, and to assist in bending it; also, to pull the ligament from between the bones.

C H A P. XXX.

Muscles situated on the Leg.

TH E S E are called *Muscles* of the *Foot*, and may be divided into *two classes*, viz. *Extensors* and *Flexors* of the *Foot*. 2. *Common Extensors* and *Flexors* of the *Toes*.

First Class.

Extensors.

These consist of three,

1. GASTROCNEMIUS EXTERNUS, seu
GEMELLUS,

Arises, by two distinct heads; the first head arises from the upper and back part of the internal condyle of the os femoris, and from that bone, a little above its condyle,

dyle, by two distinct tendinous origins. The second head *arises* tendinous from the upper and back part of the external condyle of the os femoris. A little below the joint, their fleshy bellies unite in a middle tendon, and, below the middle of the tibia, it sends off a broad thin tendon, which joins a little above the extremity of the tibia with the tendon of the following,

2. SOLAEUS seu GASTROCNEMIUS INTERNUS,

Arises, by two origins ; the first arises from the upper and back part of the head of the fibula, continuing to receive some of its fleshy fibres from the posterior part of that bone, for some space below its head. The other origin begins from the posterior and upper part of the middle of the tibia, and running inwards along the inferior edge of the popliteus towards the tibia, from which it receives fleshy fibres for some way down, and the flesh within its tendon runs down

near

near as far as the extremity of the tibia, a little above which the tendons of both unite together, and form a strong round chord, which is called *tendo Achillis*.

Inserted into the upper and posterior part of the os calcis, by the projection of which the tendo Achillis is at a considerable distance from the tibia.

Use. To extend the foot, by bringing it backwards and downwards.

Gemellus and *Solaeus*, Alb.

Gastrocnemii and *Solaeus*, Winfl.

Extensor tarfi suralis, vel *Extensor magnus*, Dougl.

3. PLANTARIS,

Arises, thin and fleshy, from the upper and back part of the external condyle of the os femoris, near the inferior extremity of that bone, adhering to the ligament that involves the joint in its descent. It passes along the second origin of the solaeus, and
under

under the Gemellus, where it sends off a long, slender, thin tendon, which comes from between the great extensors, where they join tendons, then runs down by the inside of the tendo Achillis.

Inserted into the inside of the posterior part of the os calcis, below the tendo Achillis.

Use. To assist the former, and to pull the ligament from between the bones.

Tibialis gracilis, vulgo Plantaris, Winsl.

Extensor tarsi minor, vulgo Plantaris, Dougl.

N. B. This muscle, though seldom, has been found wanting on both sides.

Flexors.

These consist of four ; two, that belong to the tibia, and two to the fibula.

I. TIBIALIS ANTICUS,

Arises, tendinous and fleshy, from the middle of that process of the tibia, to which
the

the fibula is connected above; then it runs down fleshy on the outside of the tibia, from which, and the upper part of the interosseous ligament, it receives a number of distinct fleshy fibres; near the extremity of the tibia it sends off a strong round tendon, which passes under part of the ligamentum tarfi annulare near the malleolus internus.

Inserted, tendinous, into the inside of the os cuneiforme internum, and posterior end of the metacarpal bone that sustains the great toe.

Use. To bend the foot, by drawing it upwards and inwards.

2. TIBIALIS POSTICUS.

Arises, by a narrow fleshy beginning, from the fore and upper part of the tibia, just under the process which joins it to the fibula; then passing through a perforation in the upper part of the interosseous ligament, it continues its origin from the back part of
of

of the fibula next the tibia, and from near one half of the upper part of the last named bone, as also, from the interosseous ligament, the fibres running towards a middle tendon, which sends off a round one that passes in a groove behind the malleolus internus.

Inserted, tendinous, into the upper and inner part of the os naviculare, being further continued to the os cuneiforme internum and medium ; besides, it gives some tendinous filaments to the os calcis, os cuboides, and to the root of the metatarsal bone that sustains the middle toe.

Use. To bring the foot inwards and upwards.

3. PERONAEUS LONGUS,

Arises, tendinous and fleshy, from the forepart of the head of the perone, or fibula, the fibres running straight down ; also from the upper and external part of the fibula, where it begins to rise into a round

edge ; as also, from the hollow between that and its anterior ridge, as far down as near its extremity, by a number of fleshy fibres, which run outwards towards a tendon, that sends off a long round one, which passes through a channel at the outer angle in the inferior extremity of the fibula ; then, being reflected to the sinuosity of the os calcis, it runs along a groove in the os cuboides, under the muscles in the sole of the foot.

Inserted, tendinous, into the outside of the root of the metatarsal bone that sustains the great toe, and by some tendinous fibres into the os cuneiforme internum.

Use. To move the foot outwards, and to bend it a little.

Peronaeus maximus, vulgo Peronaeus posterior, Winsl.

Peronaeus primus, seu Posticus, Dougl.

4. PERONAEUS BREVIS,

Arises, by an acute fleshy beginning, from above the middle of the external part of the fibula ; from the outer side of the anterior spine of this bone ; as also, from its round edge externally, the fibres running obliquely outwards towards a tendon on its external side ; it sends off a round tendon which passes through the groove at the outer angle, being there included under the same ligament with that of the preceeding muscle ; and a little further, it runs through a particular one of its own.

Inserted, tendinous, into the root and external part of the metatarsal bone that sustains the little toe.

Use. To pull the foot outwards and upwards.

Peronaeus medius, vulgo *Peronaeus anticus*, Winsl.

Peronaeus secundus, seu *Anticus*, Dougl.

Second Class.

Common Extensors,

These consist of two :

I. EXTENSOR LONGUS DIGITORUM
PEDIS,

Arises, tendinous and fleshy, from the upper and outer part of the head of the tibia, and from the head of the fibula where it joins with the tibia ; also, from the tendinous fascia, which covers the upper and outside of the leg, by a number of fleshy fibres ; and tendinous and fleshy, from the anterior spine of the fibula, almost its whole length, where it is inseparable from the *peronaeus tertius*. It splits into four round tendons, under the ligamentum tarfi annulare.

Inserted, by a flat tendon, into the root of the first joint of each of the four small toes, and is expanded over the upper side of the toes, as far as the root of the last joint.

Use.

Use. To extend all the joints of the four small toes.

Extensor Longus, Dougl.

N. B. A portion of this muscle, which

Arises from the middle of the fibula, continues down near its inferior extremity, and sends its fleshy fibres forwards to a tendon, which passes under the annular ligament, and is

Inserted into the root of the metatarsal bone that sustains the little toe, and is called by Albinus *Peronæus tertius*, and, by others, the *Nonus Vesalii*.

Use. To assist in extending the foot.

2. EXTENSOR BREVIS DIGITORUM PEDIS,

Arises, fleshy and tendinous, from the fore and upper part of the os calcis, and soon forms a fleshy belly, divisible into four portions, which sends off an equal number
of

of tendons that pass over the upper part of the foot, under the tendons of the former.

Inserted, by four slender tendons, into the tendinous expansion from the extensor longus, which covers the small toes, except the little one ; also, into the tendinous expansion from the extensor pollicis, that covers the upper part of the great toe.

Use. To extend the toes.

Extensor brevis, Dougl.

Flexors,

These may be reckoned three.

I. FLEXOR BREVIS DIGITORUM PEDIS,
feu SUBLIMIS PERFORATUS,

Arises, by a narrow fleshy beginning, from the inferior and posterior part of a protuberance of the os calcis, between the abductors of the great and little toes ; soon forms a thick fleshy belly, which sends off four tendons, that split for the passage of the flexor longus.

Inserted into the second phalanx of the four lesser toes, the tendon of the little toe having disscussated the rest.

Use. To bend the second joint of the toes.

Perforatus, seu Sublimis, Dougl.

2. FLEXOR LONGUS DIGITORUM PEDIS, seu PROFUNDUS PERFORANS,

Arises, by an acute tendon, which soon becomes fleshy, from the back part of the tibia, some way below its head, near the entry of the medullary artery, which beginning is continued down the inner edge of this bone, by short fleshy fibres, ending in its tendon ; also, by tendinous and fleshy fibres, from the outer edge of the tibia, and between this double order of fibres the tibialis posticus muscle lies inclosed. Having passed under two annular ligaments, then it passes through a sinuosity at the inside of
the

the os calcis, and, about the middle of the sole of the foot, divides into four tendons, which pass through the flits of the perforatus, and, just before its division, it receives a small tendon from that of the flexor pollicis longus.

Inserted into the extremity of the last joint of the four lesser toes.

Use. To bend the toes.

This muscle is assisted by the

FLEXOR DIGITORUM ACCESSORIUS, seu
MASSA CARNEA JACOBI SYLVII,

Aries, by a thin fleshy origin, from most part of the sinuosity at the inside of the os calcis, which is continued forward for some space on the same bone; also, by a thin tendinous beginning, from behind the tuberosity of the os calcis externally; and, soon becoming all fleshy, is

Inserted, into the tendon of the flexor longus, just at its division into four tendons.

Use. To assist the former.

3. LUMBRICALES PEDIS,

Arise, by four tendinous and fleshy beginnings, from the tendon of the flexor profundus, just before its division, near the insertion of the massa carnea.

Inserted, by four slender tendons, into the inside of the first joint of the four lesser toes, and are lost in the tendinous expansion that is sent from the extensors to cover the upper part of the toes.

Use. To assist in bending the toes, and to draw them inwards.

C H A P. XXXI.

Muscles which are chiefly situated on the Foot.

TH E S E may be divided into the
*Muscles of the Great Toe, of the Little
 Toe, and of the Metatarsal Bones.*

Muscles of the Great Toe.

These are five ;

I. EXTENSOR PROPRIUS POLLICIS
 PEDIS,

Arises, by an acute, tendinous, and fleshy beginning, some way below the head, and anterior part of the fibula, along which it runs to near its extremity, by a number of fleshy fibres, towards a tendon.

Inserted, tendinous, into the posterior part of the first and last joint of the great toe.

Use.

Use. To extend the great toe.

Extensor longus, Dougl.

2. FLEXOR LONGUS POLLICIS PEDIS,

Arises, by an acute, tendinous, and fleshy beginning, from the posterior part of the fibula, some way below its head, being continued down the same bone, almost to its inferior extremity, by a double order of fleshy fibres; its tendon passes under an annular ligament at the inner ancle.

Inserted into the last joint of the great toe, and generally sends a small tendon to the os calcis.

Use. To bend the last joint of this toe.

Flexor longus, Dougl.

3. FLEXOR BREVIS POLLICIS PEDIS,

Arises, tendinous, from the under and forepart of the os calcis where it joins with the os cuboides, from the os cuneiforme externum, and is inseparably united

ted with the abductor and adductor pollicis.

Inserted into the external os sesamoidaeum and root of the first joint of the great toe.

Use. To bend this first joint.

4. ABDUCTOR POLLICIS PEDIS,

Arises, fleshy, from the inside of the root of the protuberance of the os calcis, where it forms the heel, and tendinous from the same bone where it joins with the os naviculare.

Inserted, tendinous, into the internal os sesamoidaeum, and root of the first joint of the great toe.

Use. To pull the great toe from the rest.

Thenar, Winfl.

5. ADDUCTOR POLLICIS PEDIS,

Arises, by a long thin tendon, from the os calcis, under the origin of the massa carnea; from the os cuboides; from the os cunei-

cuneiforme externum, near the insertion of the peronaeus longus, and from the root of the metatarsal bone of the second toe.

Inserted into the external os sesamoidaeum, and root of the metatarsal bone of the great toe.

Use. To bring this toe nearer the rest.

Antithenar, Winsl.

Muscles of the little toe.

These, besides the common extensors and flexors, are two, viz.

1. AEDUCTOR MINIMI DIGITI PEDIS,

Arises, tendinous and fleshy, from the semicircular edge of a cavity on the inferior part of the protuberance of the os calcis, and from the root of the metatarsal bone of the little toe.

Inserted into the root of the first joint of the little toe externally.

Use.

Use. To draw the little toe outwards from the rest.

Parathenar major, and *Metatarsaeus*,
Winfl.

2. FLEXOR BREVIS MINIMI DIGITI PEDIS,

Arises, tendinous, from the os cuboides, near the fulcus or furrow for lodging the tendon of the peronaeus longus ; fleshy from the outside of the metatarsal bone that sustains this toe, below its protuberant part.

Inserted into the anterior extremity of the metatarsal bone, and root of the first joint of this toe.

Use. To bend this toe.

Parathenar minor, Winfl.

Muscles of the metatarsal bones.

These are four external and three internal interossei, and one muscle, which is common to all the metatarsal bones.

In-

Interossei Pedis Externi, seu Bicipites,

1. ABDUCTOR INDICIS PEDIS,

Arises, tendinous and fleshy, by two origins, from the root of the inside of the metatarsal bone of the fore toe, from the outside of the root of the metatarsal bone of the great toe, and from the os cuneiforme internum.

Inserted, tendinous, into the inside of the root of the first joint of the fore toe.

Use. To pull the fore toe inwards from the rest.

2. ADDUCTOR INDICIS PEDIS,

Arises, tendinous and fleshy, from the roots of the metatarsal bones of the fore and second toe next each other.

Inserted, tendinous, into the outside of the root of the first joint of the fore toe

Use.

Use. To pull the fore-toe outwards towards the rest.

3. ABDUCTOR MEDII DIGITI PEDIS,

Arises, tendinous and fleshy, from the roots of the metatarsal bones of the second and third toes next to each other.

Inserted, tendinous, into the outside of the root of the first joint of the second toe.

Use. To pull the second toe outwards.

4. ADDUCTOR TERTII DIGITI PEDIS,

Arises, tendinous and fleshy, from the roots of the metatarsal bones of the third and little toe next each other.

Inserted, tendinous, into the outside of the root of the first joint of the third toe.

Use. To pull the third toe outwards.

Interossei Pedis Interni,

1. ABDUCTOR MEDII DIGITI PEDIS,

Arises, tendinous and fleshy, from the inside of the root of the metatarsal bone of the middle toe internally.

Inserted, tendinous, into the inside of the root of the first joint of the middle toe.

Use. To pull the middle toe inwards.

2. ADDUCTOR TERTII DIGITI PEDIS,

Arises, tendinous and fleshy, from the inside and inferior part of the root of the metatarsal bone of the third toe.

Inserted, tendinous, into the inside of the root of the first joint of the third toe.

Use. To pull the third toe inwards.

3. ADDUCTOR MINIMI DIGITI PEDIS,

Arises, tendinous and fleshy, from the inside of the root of the metatarsal bone of the little toe.

Inserted, tendinous, into the inside of the root of the first joint of the little toe.

Use. To pull the little toe inwards.

The muscle which brings the extremities of the metatarsal bones towards each other is named

TRANSVERSALIS PEDIS,

Arises, tendinous, from the anterior extremity of the metatarsal bone of the great toe, and from the internal os sesamoidaeum of the first joint, adhering to the adductor pollicis.

Inserted, tendinous, into the outside of the anterior extremity of the metatarsal bone of the little toe.

Use.

Use. To bring the little toe towards the great one.

N. B. The muscles situated on the sole of the foot are covered by a strong tendinous aponeurosis, which is extended from the os calcis to the first joints of all the toes, and serves to preserve the subjacent parts from being compressed in standing and walking.

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