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A
COMPENDIUM
OF THE
ANATOMY
OF THE
HUMAN BODY.

INTENDED PRINCIPALLY FOR THE USE
OF STUDENTS.

BY ANDREW FYFE.

IN THREE VOLUMES.


VOL. I.

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TO THE
GENTLEMEN

ATTENDING THE MEDICAL CLASSES OF THE
UNIVERSITY OF EDINBURGH,

THE

THREE FOLLOWING VOLUMES,

MEANT TO FACILITATE THEIR PROGRESS IN THE
STUDY OF ANATOMY,

ARE DEDICATED,

With much respect,

By their most obedient

And very humble Servant,

COLLEGE, *Sept.* 1. }
1801.

ANDREW FYFE.

John Beresford
1805

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FIRST VOLUME.

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PART I.
OF
THE BONES.

OF THE
BONES IN GENERAL,

WHICH ARE THE FIRMEST PARTS OF THE BODY,
AND
SERVE TO CONTAIN, SUPPORT, AND DEFEND
THE OTHER ORGANS,

The following Parts are to be attended to.

THE *Radiated* appearance of the Fibres of broad Bones
in Children.

The *Longitudinal Fibres*, forming the long Bones of
Children.

The *Lamellæ*, in the long Bones of Adults.

The *Sides* of the long Bones in Adults, *thick* at the
middle, and *thin* towards the extremities.

The *Reticular Substance* in the middle, and *Cancelli* in
the extremities of long Bones, for containing the Marrow.

The *Cancelli* between the Plates of broad Bones.

The *Little Cavities* for containing Marrow and Vessels
in the most solid parts of the Bones.

The *Periosteum* which covers Bones in general, and con-
veys Nutritious Vessels into their Substance.

The *Periosteum Internum*, or *Membrana Medullaris*,
which lines the Reticulæ and Cancelli of Bones, and con-
tains the Marrow.

The *Orifices* of Bones, for the transmission of their prin-
cipal Vessels.

The *Holes* for the transmission of Nerves, which are visible in certain Bones only.

The *Globules* of *Fat* which compose the Marrow.

The *Connection* of Bones by *Suture*, where no motion is allowed.

The *Connection* of Bones by *Cartilage*, where some motion is necessary.

The *Connection* of bones by *Ligament*, where extensive motion is required.

The *Cartilages* upon the ends of Bones, for the safe and easy motion of the Joints.

The *Perichondrium*, or *Membrane* covering the Cartilages, which in moveable Joints gives these Cartilages a great degree of smoothness.

The *Substances*, called *Glands* of the Joints, for the secretion of Synovia.

The *Epiphyses* upon the ends of moveable Bones in Children, for facilitating and hastening their ossification.

The *Epiphyses* changed into *Apophyses*, or *Processes*, upon certain parts of Bones of Adults, for the attachment of Muscles, &c. and which obtain particular names according to their appearances; as Coronoid, Condylloid, &c.

The numerous *Cavities* of Bones, as *Glenoid*, *Cotyloid*, &c. the names varying according to their appearances.

SKELETON.

A *Skeleton*, formed by the Bones of the Body joined together in their natural Situation.

A *Natural Skeleton*, or one joined by its own Ligaments.

An *Artificial Skeleton*, or one joined by Wire, &c.

The *Division* of the Skeleton into *Head, Trunk, Superior* and *Inferior Extremities*.

OF THE SKULL IN GENERAL.

THE *Skull* divided into the *Cranium*, and *Bones of the Face*.

The *General Figure* of the *upper* part of the *Cranium*, compared to that of an *Egg*.

The *flat form* of the *Cranium*, *laterally*.

The *Smooth Surface* of the *upper* and *outer* part of the *Cranium*, where it is little affected by *Muscular Fibres*.

The *Periosteum of the Head*, called *Pericranium*.

The *under* and *outer Surface* of the *Cranium*, *irregular*, where it gives attachment to *Muscles*, &c. and passage to *Vessels* and *Nerves*.

The *anterior* and *under* part of the *Cranium*, *hollow*, to make part of the *Orbits*.

The *posterior Surface* of the *Cranium*, *marked* by the insertion of *Muscles* arising from the *back-part* of the *Trunk*.

The *upper* and *inner* Surface of the Cranium, *hollow*, for lodging the Brain.

The *under* and *inner* Surface of the Cranium, with *unequal Cavities*, for lodging the Lobes of the Brain and Cerebellum.

The *Furrows* along the inner side of the Cranium, for the reception of the Blood-vessels of the Dura Mater.

The *Sinuosities* upon the inner Surface of certain Crania, for lodging Luxuriances of the Brain.

The *Pits* seen in some Crania, for lodging *Granulous Bodies* on the Dura Mater.

The *External Table* of the Cranium.

The *Internal Table* of the Cranium, called *Vitreæ*, somewhat thinner than the external.

The *Diploe*, or *Cancelli*, between the Tables.—These more regular between the Bones of the upper than of the under part of the Cranium.

The Diploe wanting in certain parts of the Cranium.

In old Skulls, the Diploe almost entirely obliterated.

The Cranium, in general composed of *eight bones*, *six* of which are said to be proper to the Cranium, and *two* common to it and to the Face.

The *six* proper to the Cranium are,

The *Os Frontis*, placed in the fore-part of the Cranium.

The *two Offa Parietalia*, placed in the upper and lateral parts of the Cranium.

The *two Offa Temporum*, placed in the under and lateral parts.

The

The *Os Occipitis*, which forms the back and some of the lower part of the Cranium.

The *two Bones* common to the Cranium and Face are,

The *Os Ethmoides*, placed in the fore-part of the Base of the Cranium.

The *Os Sphenoides*, situated in the middle of the Base.

Sutures.—The Sutures, placed between the Bones of the Cranium: *Five* in number,—divided into *three True*, and *two False* or *Squamous Sutures*.

The *three True Sutures* are,

The *Coronal Suture*, placed between the Frontal and Parietal Bones, losing its serrated appearance near its terminations.

The *Lambdoid Suture*, lying between the Parietal, Temporal, and Occipital Bones.

The parts of the Lambdoid Suture, placed between the Occipital and Temporal Bones, called *Additamenta* of the Lambdoid Suture.

The *Sagittal Suture*, situated between the Parietal Bones.

The Sagittal Suture, sometimes *continued to the Nose*.

The *serrated appearance* of the True Sutures, seen distinctly on the *outside* of the Cranium only.

The *True Sutures*, having little of the serrated appearance on the *inside* of the Cranium.

The *two False Sutures*, placed between the upper Edge of the Temporal, and under Edge of the Parietal Bones.

The Portion of the two False Sutures, situated between the under and back part of the Parietal and the Temporal

Bones, called by some *Additamenta of the Squamous Sutures*, and which have in that part the true serrated appearance.

Additional Bones, called *Ossa Triquetra*, or WORMIANA, sometimes found in the different Sutures, though most frequently in the middle of the Lambdoid Suture.

The *Sutures* said to be *common* to the Bones of the Cranium and Face, are,

The *Ethmoid Suture*, which furrounds the *Æthmoid Bone*.

The *Sphenoid Suture*, which furrounds the *Sphenoid Bone*.

The *Transverse Suture*, which runs across the orbits and root of the Nose, between the Frontal, Malar, Sphenoid, *Æthmoid*, superior Maxillary, and Nasal Bones.

The *Zygomatic Sutures*, placed between the Temporal and Check Bones.

OS FRONTIS.

THE *Situation* of the *Os Frontis* in the fore-part of the Cranium.

Its *Shape*, which has been compared to that of a Clamshell.

Its *External Surface*, smooth and convex.

The external and internal *Angular*, or *Orbital Processes*.

The *Superciliary Ridges*, on which the Eye-brows are placed.

Projections above the inner ends of the *Superciliary Ridges*, indicating the situation of the Cavities, called *Frontal Sinuses*.

The

The *Nasal Process*, forming part of the Nose.

Part of the *Temporal Processes*, or *Ridges* which form the boundary between the Temporal and Frontal Muscles.

The hollow *Orbital Processes*, or *Plates*, which form the upper part of the Orbits.

The *Sinuosity* behind the upper end of the Superciliary Ridge, on each side, for lodging the Lacrymal Gland.

Behind each Internal Angular Process, a *small Pit*, to which the Cartilaginous Pulley of the Superior oblique Muscle is fixed.

The *Temporal Fossa*, for lodging part of the Muscle of that name.

The *Opening* between the Orbital Processes, for receiving the Cribriform Plate of the Æthmoid Bone.

The *Foramen Supra-orbitarium*, near the middle of each Superciliary Ridge, through which a branch of the Ocular Artery, and part of the Ophthalmic Branch of the Fifth Pair of Nerves, pass to the soft parts of the Fore-head.

The *Foramen Orbitarium Internum, Anterius et Posterius*, between the Orbital Plate of the Frontal and Æthmoid Bone, through which small twigs of Nerves from the first part of the Fifth Pair, and of Arteries from the Ocular Artery pass into the Nose.

Small Perforations found upon the under and fore part of the Frontal Bone, for the transmission of very minute Arteries or Nerves.

The *concave*, inner; and fore-part of the Os Frontis, for lodging the Anterior Lobes of the Brain.

The *convex* under parts, for supporting these Lobes, and covering the eyes.

The *Ridges* and *Depressions* of the Orbital Proceſſes, marked by the Convolutionſ of the Brain.

Small *Furrows*, on the inſide of the Bone, for lodging the Blood-veſſels of the Dura Mater.

Slight *Sinuofities*, more evident on the under than on the upper part of the Bone, occaſioned by the Convolutionſ of the anterior part of the Brain.

The *Frontal Spine*, in the middle of the under part of the Bone, for the attachment of the Falx of the Dura Mater.

The *Frontal Furrow*, extending upwards from the Spine, for lodging the upper part of the ſuperior Longitudinal Sinus of the Dura Mater.

The *Foramen Cacum* at the under part of the Spine, for the reception of a proceſs of the Falx, and of ſmall Blood-veſſels.

The *Frontal Sinuſes*, placed behind the inner ends of the Superciliary Ridges, and, in ſome ſkulls, forming Prominences near the root of the Noſe.

The *Walls* of the Sinuſes, formed by a ſeparation of the Tables of the Bone.

Their *Partition*, by which they are prevented from communicating with each other.

A *Communication* which they ſometimes have with each other.

A *Paſſage* from each, leading into the cavity of the anterior Œthmoid Cells, and from thence to the Noſe.—The Frontal Sinuſes add to the ſtrength and melody of the voice.

In a Fœtus of nine months, the Os Frontis is compoſed of two Pieces.—The Superciliary Holes and Frontal Sinuſes are not yet formed.

OSSA PARIETALIA.

THE *situation* of the Parietal Bones in the upper and lateral parts of the Cranium.

The *figure* of each Parietal Bone a Trapezium, or approaching that of a Square.

The *upper* Edge, longest.

The *anterior* Edge, next in length.

The *posterior* Edge, shorter.

The *inferior*, shortest, and in form of a ragged arch, to be connected to the upper edge of the Squamous part of the Temporal Bone.

The *three first Edges* of the Bone *ragged*, where they assist in forming the True Sutures.

The *corners* of the Bone *obtuse*, excepting the under and anterior, which forms a kind of process.

The external surface of the Bone, *smooth* and *convex*.

The transverse arched *Ridge*, or *Line*, placed externally, a little below the middle height of the Bone, for the origin of the Temporal Muscle.

The *radiated Furrows* at the under part of the Bone, formed by the Fibres of the Temporal Muscle.

The *Foramen Parietale*, near the upper and back part of the Bone, for the transmission of a Vein from the Integuments of the Head to the superior longitudinal Sinus; and sometimes of a small Artery to the Falx of the Dura Mater.

The internal *concave* Surface of the Bone.

The *Furrows* made by the Blood-vessels of the Dura Mater,

Mater, the principal of which begin by a Trunk at the under and fore part of the Bone.

The *depression* at the upper Edge of the Bone, which is most distinctly seen when the Bones are conjoined, for the attachment of the Falx, and lodgement of the superior longitudinal Sinus.

The *Fossa* at the under and back part of the Bone, for lodging a small part of the lateral Sinus.

Numerous *depressions* found on the inside of the Bone, occasioned by the prominences of the Brain.

The *connection* of the Parietal Bones to the Os Frontis by the Coronal, and to each other by the Sagittal Suture.

In the Fœtus the sides of the Parietal Bones are incomplete, and there is no Parietal Hole; and between the Parietal Bones and the middle of the Os Frontis, there is a *Membranous Substance* filling the interstice, and getting the name of *Bregma*, *Fons*, or *Fontanella*, from its having been supposed by the Ancients that the superfluous humours of the Brain are evacuated through it.

OS OCCIPITIS.

THE *situation* of the Occipital Bone in the back and under part of the Cranium.

Its *rhomboid* figure.

The two lateral *Angles*.

The external Surface, *convex* and *smooth* at the upper part.

The

The *large Arched Ridge*, near the middle of the convex Surface, to the centre of which the Trapezii Muscles are fixed, the outer parts giving origin to the Occipito-frontalis Muscle.

The *smaller Arch*, under the former.

The *depressions* between the large and small Arches, for the connection of the Complexi muscles.

The *impressions* between the Arches and the Temporal Bones, for the attachment of the Splenii.

Cavities between the smaller Arch and the Foramen Magnum, for the reception of the Recti Minores.

The *perpendicular Spine*, between the Muscles of the opposite Sides.

The *unequal Edges* of the Foramen Magnum, for the insertion of Ligaments, by which the Head is fixed to the Vertebrae of the Neck.

The *inferior Angle*, called Cuneiform or Basilar Process.

The *unequal Surface* of the Cuneiform Process, for the attachment of the Recti Anteriores Muscles.

The *Condyles* placed at the Base of the Cuneiform Process, and sides of the Foramen Magnum, for the articulation with the first Vertebra of the Neck.

The *oval form* and smooth Cartilaginous Surface of the Condyles, corresponding with the superior articulating Processes of the first Vertebra.

The *rough Edges* of the Condyles, for the attachment of their Capsular Ligaments.

The *rough Surfaces* between the Condyles and Mastoid Processes of the Temporal Bones, for the insertion of the Recti Capitis Laterales Muscles.

The

The *internal Surface* of the Bone, *hollow*, for containing the back-part of the Brain and Cerebellum.

The *Cruciform Spine* of the inner side.

The *upper Limb* of the perpendicular Spine, *hollow* in the middle, or frequently at one side, for the reception of the superior longitudinal Sinus, and the attachment of the Falx.

The *lateral Limbs* placed opposite to the great external arched Spine, and hollow in the middle, for containing the lateral Sinuses, and giving attachment to the Tentorium of the Dura Mater.

The *lower Limb* of the perpendicular Spine, for the attachment of the Falx Minor.

The *Fossæ* at the sides of the upper Limb, for containing the posterior Lobes of the Brain.

The *Fossæ* at the sides of the lower Limb, for containing the Cerebellum.

The *concave Surface* of the Cuneiform Process, for receiving the Medulla Oblongata, and Basilar Artery.

The *depressions* at each side of the Cuneiform Process, where the inferior Petrosal Sinuses are placed.

The *Foramen Magnum*, behind the Basilar Process, and at the sides of the Condyles, for the passage of the Medulla Oblongata, Vertebral Vessels, and Accessory Nerves.

The *superior or anterior Condylloid Foramina*, for the passage of the Ninth Pair of Nerves.

The *posterior Condylloid Foramina*, for the passage of Veins from the Occiput, or from the Vertebral Veins, into the Lateral Sinuses.

The *connection* of the Bone to the Ossa Parietalia, by the Lambdoid Suture.

In the Fœtus, the Occipital Bone is divided into *four pieces*; the first reaching from the middle of the Lambdoid Suture to the Foramen Magnum, the second and third are placed at the sides of that Foramen, and the fourth forms the Cuneiform Process.

OSSA TEMPORUM.

THE *situation* of each Temporal Bone in the under part of the side of the Cranium.

The *Squamous Plate*, which forms a part of the Temple, and gives origin to a portion of the Temporal Muscle.

The *Mastoid Process*, at the under and back part of the Bone, giving insertion to strong Muscles, particularly the Sterno-mastoid, and containing Cells which communicate with each other, and with the Tympanum or large Cavity of the Ear.

The *Pars Petrosa*, hard like a rock, and placed at the base of the Bone, from which it runs obliquely forwards and inwards, and contains the internal Organ of hearing; to be afterwards described.

The *Zygomatic Process*, running from the under and fore part of the Squamous Plate, to join the Os Malæ, and form an Arch, under which the Temporal Muscle passes to the Lower Jaw.

A *Tubercle* at the root of this Process, covered with Cartilage, and making part of the Articulation of the Lower Jaw.

The *Styloid Process*, placed at the root of the Pars Petrosa,

trofa, and going obliquely downwards and forwards, to give origin to Muscles which belong to the Tongue and Throat.

The *Vaginal Procefs*, of an inconfiderable fize, furrounding the root of the Styloid Procefs.

The *Rough Margin* at the under part of the external Meatus, fometimes alfo confidered as a Procefs, and called *Auditory*, for the connection of the Cartilage of the Ear.

A *Groove*, at the inner part of the root of the Mastoid Procefs, giving origin to the Digaftic Muscle.

The *Glenoid Cavity*, at the root of the Zygoma, lined with Cartilage, for the articulation of the Lower Jaw.

The *Glenoid Fiffure*, at the back-part of this Cavity, for the attachment of the Capfular Ligament of the articulation of the Jaw.

A *Depreffion* between the articular Cavity and Styloid Procefs, for lodging a portion of the Parotid Gland.

The *Thimble-like Cavity*, or the *Jugular Foffa*, at the inner fide of the root of the Styloid Procefs, for lodging the top of the internal Jugular Vein.

Meatus Auditorius Externus, between the Mastoid and Zygomatic Proceffes, leading inwards and forwards to the Organ of hearing.

Foramen Stylo-maftoideum, or *Aquæduct of Fallopius*, between the Styloid and Mastoid Proceffes, for the tranfmiffion of the Portio Dura of the Seventh Pair of Nerves.

The *Foramen Caroticum*, at the inner and fore part of the Jugular Foffa, leading upwards, then forwards through the point of the Pars Petrofa, for the tranfmiffion of the internal Carotid Artery to, and of the great Sympathetic Nerve, from the Brain.

Iter a Palato ad Aurem, or Eustachian Tube, between the Fissure for the Capsular Ligament of the Lower Jaw, and the Passage of the internal Carotid Artery. In the Subject, it is formed, by the addition of a Cartilage, into a trumpet-like Tube, which conveys air from the Nose to the Tympanum of the Ear.

Foramen Mastoideum, occasionally found at the back-part of the Mastoid Process, or in the Lambdoid Suture. When present, it sometimes transmits an Artery to the Dura Mater, but more commonly a Vein from the Integuments of the Head to the lateral Sinus.

The *upper and inner Edge* of the Squamous Plate formed into *ridges and furrows*, where it is connected with the Parietal Bone.

The *inner Surface* of the Squamous Plate, *unequal* where it is marked by the Convulsions of the Brain, and by the Arteries of the Dura Mater.

The *anterior and outer Surface* of the Pars Petrosa, opposed to the lateral Lobes of the Brain.

The *posterior and inner Surface* of the Pars Petrosa, opposed to the Cerebellum.

A *Ridge* between the two surfaces of the Pars Petrosa, for the attachment of the Tentorium.

A *Groove* upon the ridge of the Pars Petrosa, for lodging the superior Petrosal Sinus.

A *Fossa*, at the root of the posterior Surface of the Pars Petrosa, and opposite to the Mastoid Process, for lodging the lateral Sinus, where it turns downwards to go out of the Cranium.

Meatus Auditorius Internus, or Foramen Auditivum, in

the posterior Surface of the Pars Petrofa, for the passage of the Seventh Pair of Nerves.

Foramen Innominatum, in the anterior Surface of the Pars Petrofa, for the passage of a reflected Nerve from the Fifth to the Seventh Pair.

Foramen Lacerum Posterius, or *Hole* common to the Pars Petrofa and Cuneiform Procefs of the Occipital Bone, for the passage of the lateral Sinus, Eighth Pair, and Accessory Nerves.—The Nerves pass through the fore-part of the Hole, and are separated from the Sinus by a Procefs of the Dura Mater.

The *Connection* of the Bone, at its upper curved Edge, to the Parietal Bone by the Squamous Suture.

To the under and back part of the Parietal Bone, by the Additamentum of the Squamous Suture.

To the Occipital Bone, by the Additamentum of the Lambdoid Suture.

In a Fœtus, the Squamous is separated from the Petrous part by a Fiffure. There is no appearance of Mastoid or Styloid Procefs, and, instead of a Meatus Externus, there is only a Ring of Bone, in which the Membrana Tympani is fixed.

OS OETHMOIDES.

THE *Situation* of the Oethmoid or Cribriform Bone in the fore-part of the Base of the Cranium.

Its *Cuboid Figure*.

The

The *Cribriform Plate*, perforated with many holes, for the transmission of the First, or Olfactory Pair of Nerves.

The *Crista Galli* arising from the middle of the Cribriform Plate, to give attachment to the Falx of the Dura Mater.

A *Notch* at the fore-part of the root of the *Crista Galli*, contributing, in a very small degree, to the formation of the Foramen Cæcum of the Frontal Bone.

The *Nasal Plate*, extending downwards from the base of the *Crista Galli*, to form the upper and back part of the Septum, or Partition of the Nostrils.

The *Œthmoid Cells*, of an indeterminate number and form, placed under the Cribriform Plate, a little to the outside of the Nasal Lamella, separated from each other by thin Laminæ, and serving the same purposes as the Frontal Sinuses.

Their *Communications* with each other, with the Frontal Sinus, and also with the Cavity of the Nose.

The *Os Spongiosum*, or *Turbinatum Superius*, projecting inwards and downwards from the Œthmoid Cells at the side of the Nasal Lamella, for enlarging the Organ of Smell.

Its *Triangular form* and *Spongy texture*.

Its *Convexity* towards the Septum, and *Concavity* outwards.

The *Os Planum*, or *Orbital Plate*, for covering a large share of the Œthmoid Cells, and forming the greater part of the inner side of the Orbit.

The *Connection* of the Cribriform Plate to the Orbital Plates of the Frontal Bone by the Œthmoid Suture; and to the Sphenoid Bone, by a Suture common to the two Bones, but generally considered as belonging to the latter.

The *Connection* of the Os Planum to the Orbital Plate of the Frontal Bone, by part of the Transverse Suture.

The *posterior Edge* of the Nasal Plate, joined to the Processus Azygos of the Sphenoid Bone.

Its *upper Edge*, joined to the Nasal Process of the Frontal and Nasal Bones.

Its *anterior Edge*, joined to the middle Cartilage of the Nose.

In the Foetus, the Æthmoid Bone is divided into two by a Cartilaginous Partition, which afterwards forms the Nasal Plate and Crista Galli.

OS SPHENOIDES.

THE *Situation* of the Sphenoid, Cuneiform, or Wedge-like Bone, in the middle of the Cranium.

Its *Irregular Figure*, compared to that of a Bat with extended wings.

The *Temporal Plate*, or *Wing*, hollow, for lodging a share of the Temporal Muscle.

The *Orbital Plate*, which forms a portion of the outside of the Orbit.

The *Spinous Process*, at the under and back part of the Temporal Plate, and

The *Styloid Process*, at the point of the Spinous, from both of which the Circumflexus Palati Muscle arises.

The *Pterygoid*, or *Aliform Process*, composed of two Plates,

Plates, which are compared to the wings, though more properly resembling the feet of the Bat.

The *external Plate*, broad and hollow without, where the external Pterygoid Muscle has its origin.

The *internal Plate*, narrower and longer than the external, and, with its fellow, forming the back-part of the Nose.

A *Hook-like Process* upon the internal Plate, over which the Circumflex Muscle of the Palate moves.

The *Fossa Pterygoidea*, between the Pterygoid Plates, giving rise to the internal Pterygoid Muscle.

A *Groove* between the root of the Styloid Process, and that of the internal Pterygoid Plate, assisting in the formation of the Eustachian Tube.

The *Triangular Process*, which adheres to the body of the Sphenoid, and to the Æthmoid Bone, and which is considered as one of the Bones of the Face.

The *Processus Azygos*, standing single, and projecting from under the middle and fore part of the Bone.

The *Clinoid Processes*, compared to the supporters of a Bed, of which there are

Two Anterior, terminating each in a point which obtains the name of *Transverse Spinous Process*; and

One Posterior, situated transversely, some way behind the anterior Processes, and frequently ending in two knobs, which incline obliquely forwards.

Processus Olfactorius, considered by some as a fourth Clinoid Process, lying between the posterior points of the anterior Clinoid Processes.

Between the anterior Clinoid Processes, a *small-pointed*

Process frequently juts forwards, to join the Cribriform Plate of the Æthmoid Bone.

The *Temporal Fossa* of this Bone, which lodges a share of the Lateral Lobe of the Brain.

A *Fossa* between the anterior Clinoid Processes, where part of the anterior Lobes of the Brain rests.

A *Depression* before the Processus Olivaris, where the conjoined Optic Nerves lie.

The *Sella Turcica*, *Ephippium*, or *Turkish Saddle*, between the Processus Olivaris and posterior Clinoid Process, for lodging the Glandula Pituitaria.

A *Depression* upon the side of the posterior Clinoid Process and Sella Turcica, formed by the internal Carotid Artery.

The *Foramen Opticum* under the anterior Clinoid Process, for the transmission of the Optic Nerve and Ocular Artery.

The *Foramen Lacerum Superius*, or *superior Orbital Fissure*, under the anterior Clinoid Process and its transverse spinous part, for the passage of the Third, Fourth, first part of the Fifth, and the Sixth Pair of Nerves, with the Ocular Vein.

The *Foramen Rotundum*, a little behind the Foramen Lacerum, for the passage of the second part of the Fifth Pair of Nerves.

The *Foramen Ovale*, farther back, and more external than the Rotundum, for the passage of the third part of the Fifth Pair of Nerves, and, commonly, for the passage of the Veins which accompany the principal Artery of the Dura Mater.

The

The *Foramen Spinale*, in the Point of the Spinous Process, for the transmission of the principal Artery of the Dura Mater.

The *Foramen Pterygoideum*, termed also, after the discoverer, *Foramen Vidianum*, at the root of the inner Plate of the Pterygoid Process, for the passage of a reflected branch of the second part of the Fifth Pair of Nerves.

Sometimes one or more small passages are observed in or near the Sella Turcica, for the transmission of Blood-vessels into the Sphenoid Sinus, or to the substance of the Bone.

The *Foramen Lacerum Anterior*, common to the point of the Pars Petrosa, and to the Sphenoid and Occipital Bones.

In a recent Skull, this Hole is filled with a Cartilaginous Ligament, which drops out by maceration.

The *Sphenoid Sinus*, in the body of the Bone, at the under and fore part of the Sella Turcica, answering the same purpose with the Æthmoid and Frontal Cells.

A *complete Partition* between the right and left Sphenoid Sinuses.

A *Passage* from the upper and fore part of the Sphenoid Sinus, descending, in a slanting direction, into the superior posterior part of the Nose.

The *Substance* of the Bone, the most unequal of any in the Body, some parts being extremely thin, while others are thicker than most parts of the Cranium.

The *Connection* of the Bone to all the other Bones of the Cranium, by the Sphenoid Suture.

In the Fœtus, the Temporal Wings are separated from the Body of the Bone by Maceration, and there are no Sphenoid Sinuses.

THE BONES OF THE FACE.

THEIR *Division* into *Upper* and *Under Jaws*.

The *Upper Jaw* composed of *seven pairs of Bones*, and *one without a fellow*, viz.

Two Offa Nasi; *Two Offa Unguis*; *Two Offa Malarum*; *Two Offa Maxillaria Superiora*; *Two Offa Palati*; *Two Offa Spongiosa Inferiora*; *Two Offa Triangularia*; and the *Vomer*.

The *Lower Jaw* consists of *a single Bone*.

OS NASI.

Its *Situation* in the upper and fore part of the Nose.

Its *Oblong Form*.

The *thick, ragged*, upper end, where it forms a strong connection with the Frontal Bone.

The *thin* inferior extremity, which gives attachment to the Cartilaginous part of the side of the Nose.

Its external *Convexity*.

Its internal *Concavity*, where it forms part of the Cavity of the Nose.

The *Spinous Process*, which joins the Nasal Lamella of the Œthmoid Bone, and thereby forms part of the partition of the Nose.

One or more *Holes* externally, for transmitting Vessels into the Substance of the Bone, or Membrane of the Nose.

Its *Connection* to the Frontal Bone by the Transverse Suture, and

To its fellow by the Anterior Nasal Suture.

OS UNGUIS, or LACRYMALE.

Its *Situation* at the inner and fore part of the Orbit.

The *Division*, externally, into *two depressed Surfaces* and a *middle Ridge*.

The *posterior Depression*, the larger of the two, forming part of the Orbit.

The *anterior Depression*, lodging part of the Lacrymal Sac and Duct, and perforated by small Holes, through which Fibres pass, to make a firm connection between the Bone and its investing Membrane.

The *inner Surface*, composed of a *Furrow* and *two irregular convex Surfaces*, corresponding with the anterior Æthmoid Cells.

The *Substance* of the Bone, the *thinnest* and *most brittle* of any in the Body.

Its *connection* to the Frontal Bone, by the Transverse Suture, and to the Os Planum by the Æthmoid Suture.

Internally, it is connected with the Æthmoid Cells.

OS MALÆ.

Its *Situation* in the outer part of the Cheek.

The *external, convex, smooth Surface*.

The *posterior hollow Surface*, for lodging part of the Temporal Muscle.

The

The *superior Orbital Process*, forming part of the outside of the Orbit.

The *inferior Orbital Process*, forming part of the lower Edge of the Orbit.

The *Maxillary Process*, forming the under part of the Prominence of the Cheek.

The *Arch* between the Orbital Processes, which forms near a third part of the anterior circumference of the Orbit.

The *Zygomatic Process*, which, with that of the Temporal Bone, forms the Arch over the Temporal Muscle.

The *Internal Orbital Plate*, forming the outer and fore-part of the Orbit.

A *Passage* through the Bone, for the transmission of small Vessels or Nerves from the Orbit to the Face.

The *Connection* of the superior Orbital Process and internal Orbital Plate to the Frontal and Sphenoid Bones, by the Transverse Suture.

The *Connection* of the Zygomatic Process to the Temporal Bone, by the Zygomatic Suture.

OS MAXILLARE SUPERIUS.

Its *Situation* in the fore-part of the Upper Jaw, and side of the Nose.

Its *Size*, the largest of the Bones of the Upper Jaw.

The *Nasal*, or *Angular Process*, forming part of the side of the Nose, and of the inner part of the Orbit, and overlapping the upper part of the outer edge of the Os Nasi.

A *Ridge* at the under and inner side of the Nasal Process, for supporting part of the Os Spongiosum Inferius.

The *Orbital Plate*, forming a large share of the under side of the Orbit.

The *Malar Process*, *unequal* and *ragged*, where it contributes, with the Os Malæ, to form the Prominence of the Cheek.

The *Tubercosity*, or *bulge* at the back-part of the Bone, which forms the posterior boundary of the Cavity called *Antrum Maxillare*, and gives origin to a portion of the External Pterygoid Muscle.

The *Alveolar Arch*, of a spongy nature, where the Sockets of the Teeth are placed.

The *Palate Plate* or *Process*, placed horizontally, forming part of the Roof of the Mouth, and of the Bottom of the Nose.

The *Palate Plate*, *thin* in its middle, and *thick* at its edges; *smooth* towards the Nose, but *rough* and *unequal* below for the firm connection of the Membrane of the Palate.

The *Nasal Spine*, contributing, in a small degree, to the formation of the Septum of the Nose.

A *Depression* behind the Malar Process, where the under end of the Temporal Muscle plays.

A *Depression* at the under and fore part of the Malar Process, where the Muscles which raise the Upper Lip, and corner of the Mouth, originate, and where a Branch of the Fifth Pair of Nerves is lodged, and commonly, a large Portion of Fat.

An *Arch* formed by the Palate Plate, both above and below, for enlarging the Cavities of the Nose and Mouth.

A *Notch* forming the under and fore part of the Nostril, to the edge of which, and to the corresponding one of the Nasal Process, the Cartilages of the side of the Nose are connected.

The *Alveoli*, or *Sockets* for the Teeth, porous for the firmer adhesion of the reflected Membrane of the Gums, and for the transmission of Blood-vessels into the substance of the Bone; the number of Sockets corresponding to the Fangs of the Teeth.

The *Lacrymal Groove*, which, with that of the Os Unguis, forms a passage for the Lacrymal Duct into the Nose.

A *Canal* in the Orbital Plate, terminated anteriorly by the *Foramen Infra-orbitarium*, through which the Infra-orbital branch of the second part of the Fifth Pair of Nerves, with a branch of the internal Maxillary Artery, pass to the Face.

The *Foramen Incisivum*, or *Palatinum Anterior*, behind the fore-teeth, common to both Bones below, but proper to each above, and filled with a Process of the soft Palate, and with small Vessels and Nerves, which run between the Membranes of the Mouth and Nose.

In some Subjects, there is a distinct *Ductus Incisivus*, leading from one or from each Nostril into the Cavity of the Mouth, similar to that which is always found in the large Quadrupeds.

A small *Hole* commonly found in the Nasal Process, and some *minute Passages* at the back-part of the Tuberosity, for the transmission of Blood-vessels and Nerves into the Substance of the Bone and Teeth, and into the Antrum Maxillare.

Sinus Maxillaris, Antrum Maxillare, or Highmorianum, of great size, occupying the whole inner part of the Bone, situated under the Orbital Plate, and above the large *Dentes Molares*, destined for the same purposes as the other Sinuses of the Bones of the Head.

The *Opening* of the Sinus, large in the separated Maxillary Bone, but, in the connected state, so covered by the inferior spongy, and by the Palate-bones and Membranes, as to leave only one, or sometimes two Apertures, little larger than to admit the point of a Surgeon's Probe. The Apertures descend obliquely backwards, and terminate between the *Ossa Spongiosa, superius et inferius*, in the Cavity of the Nose.

The *Connection* of the *Os Maxillare Superius*, to the Frontal Bone, by the Transverse Suture;—to the *Os Unguis*, by the Lacrymal Suture;—to the *Os Nasi*, by the lateral Nasal Suture;—to the Cheek-bone, by the internal and external Orbital Sutures;—to the *Os Planum*, by the *Æthmoid Suture*;—to its fellow, by the Longitudinal Palate Suture.

Anteriorly, between the Mouth and Nose, the Bones are joined together by the *Mystachial Suture*.

In the *Fœtus*, there are Six Sockets for the Teeth.—There is no Tuberosity, and the Maxillary Sinus is only beginning to form.

OS PALATI.

Its *Situation* in the back-part of the Palate.

The *Oblong Form* of the Palate-plate, which forms the back-part of the Osseous Palate.

Its

Its *posterior curved Edge*, where it is connected with the Velum Palati; also the *Point* at the inner extremity of the Curve, for the origin of the Muscle of the Uvula.

Its *thick, strong Substance*, where it joins its fellow.

Its *Spinous Process* at the inner Edge of the Palate-plate, joining the under Edge of the Vomer, and contributing to the formation of the Septum Narium.

The *Pterygoid Process*, of a *Triangular form*, with *Fossæ* corresponding to the Pterygoid Plates of the Sphenoid Bone.

The *Nasal Plate*, forming a portion of the side of the Nose, and Antrum Maxillare.

A *Ridge* on the inside of this Plate, upon which the back-part of the inferior Spongy Bone rests.

The *Orbitar Processes* at the upper and back part of the Nasal Plate, contributing a little in the formation of the Orbit, and of the Æthmoid and Sphenoid Sinuses.

A *Notch* between the Orbitar Processes, forming part of the *Foramen Spheno-palatinum*, for the passage of the lateral Nasal Vessels and Nerve.

Foramen Palatinum posterius, or *Palato-Maxillare*, at the outer end of the Palate-plate of this Bone, but common to it and the Maxillary Bone, for the transmission of the Palatine Vessels and Nerve.

A *small Hole* frequently observed behind the former, and communicating with it, for the passage of a branch of the Palatine Nerve.

Foramen Spheno-Maxillare, Lacerum Inferius, or *Inferior Orbitar Fissure*, at the under and outer part of the Orbit, and common to the Cuneiform, Maxillary, Malar, and

and Palate Bones, for lodging fat belonging to the Eye, and transmitting small twigs of Vessels and Nerves into the Orbit.

The *Connection* of the Os Palati to the Palate Plate of the Maxillary Bone, by the Transverse Palate Suture ;—to the Maxillary Bone, at the side of the Nose and bottom of the Orbit, by the Palato-maxillary Suture ;—to the Pterygoid Process of the Sphenoid Bone, by the Sphenoid Suture ;—to the Os Planum and Æthmoid Cells, by the Æthmoid Suture ;—to its fellow, by the longitudinal Palate Suture.

OS SPONGIOSUM, or TURBINATUM INFERIUS.

Its *Situation* in the under part of the side of the Nose.

Its *Triangular form* and *Spongy* appearance.

Its *Convexity* towards the Septum Nasi, and *Concavity* outwards.

The *two Processes* at the upper part of the Bone, the anterior, forming part of the Lacrymal Groove, and the posterior, part of the Side of the Maxillary Sinus.

The *connection* of this Bone to the Os Maxillare, Os Palati, and Os Unguis, by a distinct Suture in the young subject ; but in the Adult, by a concretion of substance.

OS TRIANGULARE, or SPHENOIDAL CORNU.

The *Situation* of the Triangular Bone between the body of the Sphenoid Bone and root of its internal Pterygoid Process, covering the under part of the Sphenoid Sinus.

Its *Connection* to the back-part of the Æthmoid Bone.

—In

—In an old person, it grows so firmly to the Sphenoid Bone, as to be considered by some Authors as one of its Processes.

VOMER.

Its *Situation* in the under part of the Septum Nasi, where it separates the Nostrils from each other.

It is frequently bent to one side, in which case the one Nostril is rendered larger than the other.

Its *Form* compared to that of the Plough-share.

The *Superior* and *Posterior* Part, *thick* and *strong*, with a *Furrow* to receive the Processus Azygos of the Sphenoid Bone.

The *Superior* Part, with a *Furrow* to receive the Nasal Plate of the Æthmoid Bone, and Cartilage of the Nose.

The *Inferior* Edge connected with the Spinous Processes of the Palate and Maxillary Bones.

The *Posterior* Edge, unconnected with any other Bone, and turned to the Cavity of the Fauces.

MAXILLA INFERIOR.

THE *Figure* of the Maxilla Inferior, or Lower Jaw, compared to that of the Greek *v*.

Its *Division* into *Chin*, *Sides*, and *Processes*.

The *Chin*, extending between the Mental Foramina.

The *Side* reaching from the Mental Foramen to the back-part of the Bone.

A *transverse Ridge* on the fore-part of the Chin, with depressions on each side, for the origin of the Muscles of the Under Lip.

Small Prominences and Depressions on the under and back part of the Chin, for the attachment of the Frænum Linguae, and of several Muscles which belong to the Throat.

The *Base*, or *lowest part*, forming the under boundary of the Face.

The *Angle* of the Jaw at the back-part of the Base.

Impressions made by the Masseter Muscle, upon the Plate which arises from the Angle of the Jaw.

The *Condylod* or *Articular Process*, with an oblong smooth Cartilaginous Surface, placed transversely upon a Cervix at the upper and back part of the Bone.

The *Coronoid Process*, into which the Temporal Muscle is inserted, *situated* a little before the Condylod Process, and under the Zygoma.

A *Semilunar Notch* between the Processes.

The *Alveolar Process*, and *Alveoli*, at the upper edge of the Bone, similar to those of the Upper Jaw.

The *Sockets* worn down by old age, in consequence of which the Teeth drop out, the Jaw becomes narrower, and, when the Mouth is shut, appears more prominent.

The *posterior Maxillary Foramen* at the root of the Condylod and Coronoid Processes, upon the inner side of the Jaw, for the passage of the Third, or inferior Maxillary Branch of the Fifth Pair of Nerves, with corresponding Blood-vessels.

A *small-pointed Process* at the inner edge of this Hole,

where a Ligament goes off to be fixed to the Temporal Bone.

Above the Hole, the Bone *marked* by the passage of the Nerve and Vessels, and below it, commonly, a *small Furrow* pointing out the course of a Nerve which goes to a Muscle and Gland under the Tongue.

Between the posterior Maxillary Foramen and the angle, the Bone *marked* by the insertion of the Internal Pterygoid Muscle.

The *Anterior Maxillary Foramen*, or *Mental Hole*, at the side of the Chin, where the remains of the Inferior Maxillary Nerve and Vessels come out.

The *Inferior Maxillary Canal*, running in the substance of the Bone, between the Posterior and Anterior Foramina, a little below the roots of the Teeth, and having many perforations, for the passage of small branches of Vessels and Nerves which supply the Jaw and Teeth.

The *Surface* of the Jaw, remarkably *hard*, and within, having *numerous Cells*, which surround the Maxillary Canals.

The *Articulation* of the Jaw by its Condylod Processes, with the Glenoid Cavity of the Temporal Bone, and also with the Tubercle at the root of its Zygomatic Process.

An *intermediate moveable Cartilage*, placed in the Articulation of the Lower Jaw, allowing the Condyle to remain in the Glenoid Cavity, in the gentler motions of the Jaw, but admitting it to advance upon the Tubercle or root of the Zygoma, when the mouth is widely opened.

In a Foetus, the Lower Jaw is composed of two Pieces joined together in the middle of the Chin, by the intervention of a Cartilage, which gradually ossifies, and leaves no mark of division between the Cancelli.—The Cavities for the Teeth are similar to those in the Upper Jaw.

TEETH.

THE *Situation* of the Teeth in the Alveoli of the Jaws.

Their *Number*, *Sixteen* in each Jaw.

The *Base*, or *Body* of each Tooth, which appears without the Sockets.

The *Roots* or *Fangs*, placed in the Sockets, and of a *Conical* form.

The *Cervix*, or *Collar*, between the Base and Roots of the Teeth.

The *Roots* of the Teeth covered by a *Vascular Membrane*, reflected from the Gums, and serving as a *Periosteum*.

The *Cortex*, or *Enamel*, which covers the base of each Tooth, and becomes gradually thinner towards the *Cervix*.

The *Fibres* of the Enamel placed perpendicular to the Osseous Substance, to diminish the effects of Friction.

The *Fibres* of the Osseous Part of the Teeth forming *Lamellæ*, which run in the direction of the surface of the Teeth.

A *Foramen* at the point of the root of each Tooth, and a Passage leading from it into a common Cavity in the Base of the Tooth, for lodging the Vascular and Nervous Substance called Pulp of the Teeth.

Division of the Teeth into Three Classes, viz.

—On each side of each Jaw,—

*Two Incisores, or Cutting Teeth:—One Caninus, Cuspida-
tus, or Dog's Tooth:—Two Bicuspides, or small Anterior Mo-
lares, or Grinding Teeth, and Three large Posterior Mola-
res, or principal Grinders.*

The Incisores, having their *Bases* formed into *Wedges sloped out behind.*

The Caninus, having its *Base* in form of a *Wedge pointed in the middle.*

The small Molares, each with *double points*, which, in the Upper Jaw, are nearly upon a level, but, in the Under Jaw, highest on the outside of the Teeth.

The Incisores, Caninus, and small Molares, with *single roots*, excepting the small Molares of the *Upper Jaw*, which have frequently *two roots*.

The first of the three posterior, or lower Molares of the *Under Jaw*, with *five*, and each of the other two with *four points*.

Each of these three Teeth having *two, three, or some-
times four roots*.

In the *Upper Jaw*, the first large Molaris having only *four*, and each of the other two only *three points*.

In each of these three Teeth, generally *one root more in
those*

those of the *Upper*, than in the corresponding Teeth of the *Under Jaw*.

The last, or backmost Molaris, called *Sapiens*, from its appearing much *later* than the rest, *smaller*, and having generally *fewer roots*.

The Teeth *connected* to the Sockets by *Gomphosis*, (like a nail fixed in a board), and by a firm adhesion to the Gums.

At Birth, the outer Shell only of the five deciduous Teeth, and of the anterior permanent Molaris, in each side of each Jaw, is found.

These Teeth are situated in Capsules, within the Jaw, and under its surface. At this period there are no Roots formed.

Between the inner side of the deciduous Teeth and the Alveoli, other Capsules of an inferior size are placed, and connected by Processes with the Gums, in which the permanent Incisores and Canini are afterwards formed; but at this time there is no appearance of Ossification having yet begun in any of these. *Vid. BLAKE, De Dentium Formatione, 1798.*

OS HYOIDES.

THE *Situation* of the Os Hyoides, at the root of the Tongue and top of the Larynx, where it serves as a Lever, allowing several Muscles, moving these parts, to be fixed to it.

The *Shape*, compared to that of the Greek letter *v*.

The *Body* of the Bone, *convex* before, and *concave* behind.

Several *Impressions* seen on its *Body*, occasioned by the numerous *Muscles* fixed to it.

The *Cornua*, extending backwards and upwards from each side of the *Body*.

The *Appendices*, placed at the upper part of the *Articulation* between the *Body* and *Cornua*.—

From each *Appendix* a *Ligament* is sent up to the *Styloid Process* of the *Temporal Bone*.

The *Os Hyoides* is not immediately connected to any other *Bone*, but is kept in its place by numerous *Muscles* and *Ligaments*, to be afterwards mentioned.

At birth, the greater part of the *Bone* is in a *Cartilaginous state*, and the *Appendices* continue so for many years after the other parts are completely ossified.

TRUNK.

TRUNK.

THE Trunk, *composed* of the *Spine*, *Pelvis*, and *Thorax*.

The *Spine*, reaching from the Condyles of the Occipital Bone, to the lower end of the Os Coccygis.

The *Spine* appearing *straight*, when viewed anteriorly or posteriorly.

The several *Curvatures* of the *Spine*, when viewed in a lateral direction.

The *Spine*, *composed* of a long upper, and a short under Pyramid, joined together by their Bases.

The upper Pyramid, *composed* of *true Vertebrae*, or bones which turn upon each other.

The under Pyramid, formed of *false Vertebrae*, or Bones which, at an early period of life, resemble the true *Vertebrae*, but afterwards grow together, so as not to contribute to the motions of the Trunk of the Body:

TRUE VERTEBRÆ,

Twenty-four in Number.

EACH of the true *Vertebrae* *composed* of a *Body* and *Processes*.

The *Body* of a *spongy* nature, with *upper* and *under Surfaces* placed horizontally.

The anterior *convexity* of the *Body*, and posterior *concavity*.

Numerous *small Holes* on the anterior and lateral parts of the *Body*, for the passage of *Blood-veffels* into the *Substance* of the *Bone*, or for the attachment of *Ligamentous Fibres*.

A *Ring of Bone*, at the upper and under edges of the *Body*, of a firmer texture than the rest of its *Substance*, and thereby adding to the general strength of the *Bone*.

The *Ring of Bone* forming a *superficial Cavity*, which receives the *Intervertebral Cartilage*.

The *Intervertebral Cartilages*, or *Cartilago-ligamentous Substances*, placed between the *Bodies* of the *Vertebræ*, for fixing them together, and allowing the *Spine* to be moved in all directions.

The *Intervertebral Substances* composed of *Concentric Lamellæ*, with their edges fixed to the bodies of the *Vertebræ*.

The *Lamellæ* of these *Substances* formed of *Oblique Fibres*, which decussate each other, and are very compressible.

The *Centre* of these *Substances* changed from *Lamellæ*, and putting on the appearance of a *Mucus* or *Pulp*, which has little compressibility, and serves as a *pivot* upon which the other parts move.

The *Intervertebral Substances*, like the *Vertebræ* themselves, *larger* and *thicker* as they descend, to give greater security to the parts they support.

An *Arch* sent out from the back-part of the Body, which, together with the Body, forms a *large Hole* for the passage of the Spinal Marrow.

A *Notch* at the upper and under edge of each side of the Arch, for the passage of the Spinal Nerves.

The *two Superior Oblique*, or *Articulating Processes*, covered with Cartilage, placed upon the upper part of the sides of the Arch.

The *two Inferior Oblique*, or *Articulating Processes*, also covered with Cartilage, and placed upon the under part of the sides of the Arch.

The *two Superior Oblique Processes* of one Vertebra, articulated with the *two Inferior Oblique* of the Vertebra immediately above it.

The *two Transverse Processes* projecting from the sides of the Arch, and between the Oblique Processes.

The *Spinous Process*, sent out from the back-part of the Arch, which being sharp and pointed, gives name to the whole chain of Bones.

The *Edges* of the Processes, as well as of the Body, *rough*, where Ligaments come off which fix them to each other.

The Vertebrae divided into *seven Cervical*, *twelve Dorsal*, and *five Lumbar*.

The *Cervical Vertebrae*, or *Vertebrae of the Neck*, having their Bodies *smaller*, *more flattened*, *before and behind*, and *more hollowed above and below*, than those of the other Vertebrae.

The *Articulating Processes*, *more Oblique* than any others.

The *Transverse Processes*, *perforated* for the passage of the
the

the Vertebral Blood-vessels, and *hollowed* above for the transmission of the Spinal Nerves.

The *Spinal Processes*, placed horizontally, *shorter* than any other, and *forked* for the attachment of Muscles.

The Cervical Vertebrae admitting of *free motion*, in consequence of the thickness of their Cartilages, and the nature of their Processes.

The first Vertebra, called *Atlas*, from its supporting the Globe of the Head, having only a small Arch instead of a Body.

The Upper and Under Surfaces of the Arch, *marked* by the Ligaments which fix it to the Head and second Vertebra.

The back-part of the Arch, *hollow*, and *covered by a smooth Cartilage*, where it turns upon the Processus Dentatus of the second Vertebra.

The Inner Parts of the sides of the Vertebra, between the Superior and Inferior Oblique Processes, *marked* by the Lateral Ligaments which go to the Processus Dentatus, and by the Transverse Ligament which passes behind that Process.

An *Arch* upon the back-part of the Atlas, instead of a Spinous Process, *marked* by Muscles and Ligaments.

The *Superior Oblique Processes*, *oval* and *hollow*, for receiving the Condyles of the Occipital Bone.

A *curved Fossa* under the outer and back part of each Oblique Process, for the passage of the Vertebral Arteries into the Head, and Tenth Pair of Nerves out of it.

The

The *Transverse Processes*, longer than in any other Cervical Vertebra, for the origin of several Muscles.

The *Connection* of the Atlas to the Occipital Bone, where the Head has its *flexion* and *extension*, but little other motion.

The second Vertebra, called *Dentata*, from the Tooth-like Process on the upper part of its Body.

The *Body* of this Vertebra, larger than the rest, and of a *Conical* figure.

The fore-part of the *Processus Dentatus*, covered with *Cartilage* where it turns upon the Atlas.

The *Sides* of this Process, marked by the insertion of the Lateral Ligaments, and its *Point* by the insertion of the perpendicular Ligament which is fixed to the Edge of the Foramen Magnum of the Occipital Bone.

The *Superior Oblique Processes* placed horizontally, and elevated in the middle, to be received into the hollow Inferior Oblique Processes of the Atlas, where the Head has its principal rotatory motion.

The *Spinous Processes*, thick and strong, to give origin to the Muscles which assist in the extension and rotation of the Head, and turned down to allow these motions to be readily performed.

The *seventh Cervical Vertebra*, approaching to the form of the Dorsal Vertebrae.—The Spinal and Transverse Processes have no bifurcation.

The *Dorsal Vertebrae*, or *Vertebrae of the Back*, having their bodies larger, sharper before, flatter at the sides, and more hollow behind, than those of the Cervical Vertebrae.

A *Pit*, lined with Cartilage at each side of their upper
and

and under Edges, near the Transverse Processes, for the articulation of the Heads of the Ribs.

The *Intervertebral Cartilages*, *thin*, to admit of little motion only, and *thinnest* anteriorly, to enlarge the Curvature of the Spine, and increase the cavity of the Thorax.

The *Oblique Processes*, having nearly a perpendicular direction, the upper ones slanting forwards, and the under ones backwards.

The *Transverse Processes*, long, turned obliquely backwards, enlarged at their outer extremity, where they are faced with Cartilage, to be articulated with the Tubercles of the Ribs.

The *Spinous Processes*, long, thick at the roots, but slender near the extremities, and pointing obliquely downwards over each other, by which the Spinal Marrow in this part is well protected.

The upper Edge of each of the Spinous Processes of these Vertebrae, formed into a *Ridge*, which, in certain motions of the Spine, is received by a Groove in the under part of the Spinous Process of the Vertebra immediately above it.

The last peculiarity of Structure, with the others already mentioned, prevent the Dorsal Vertebrae from having much motion.

The *first Dorsal Vertebra* having the whole of the Pit for the Head of the first Rib formed in it.

The *twelfth Dorsal Vertebra* receiving the whole Head of the last Rib, and having no Cartilaginous Surface on its Transverse Process.

The

The *Lumbar Vertebrae*, or those of the Loins, having their bodies larger and broader than those of the other two classes.

The *Intervertebral Cartilages*, the thickest of any, and most so at their fore-part, by which the Spine is rendered convex there, for the support of the Abdominal Bowels.

The *Oblique Processes*, remarkably deep, and placed upright, the Superior Oblique Process of one Vertebra facing inwards, and receiving the Inferior Oblique Process of the Vertebra below it, which is turned in the opposite direction.

The *Transverse Processes*, long, slender, and almost erect, to give origin to large Muscles, and to admit of free motion.

The *Spinous Processes*, short, large, and strong, and placed horizontally, with narrow Edges above and below, and broad flat Sides, giving origin to Muscles of great strength.

The *Spinal Canal*, larger than in the Back, for the passage of the Cords of the Spinal Marrow which form the Cauda Equina.

In consequence of the thickness of the Intervertebral Cartilages, and the situation of the Processes of the Lumbar Vertebrae, the motion of this part of the Spine extensive, though not so much so as in the Neck.

FALSE

FALSE VERTEBRÆ.

THE FALSE VERTEBRÆ, *composed of the Os Sacrum and Os Coceygis.*

OS SACRUM,

Supposed to be named rather from its size, when compared with the other Vertebræ, than from its having been offered in sacrifice.

The *triangular form* of the Bone, with its pointed under extremity.

The *flat concave anterior Surface*, for enlarging the Cavity of the Pelvis.

The *under and fore part*, forming a *turn*, called by some *Lesser Angle* of this Bone.

The *convex irregular Surface behind*, where strong Muscles arise.

Four transverse prominent Lines seen anteriorly, indicating the situation of the Cartilages which originally divided the Bone into five pieces.

The *Spinal Canal*, of a triangular form, becoming gradually smaller in its descent; corresponding to the size of the Cauda Equina which goes through it.

The *under part* of the Spinal passage, commonly *open* behind, the Canal being completed, in the Subject, by the addition of a Ligamentous Membrane.

The *Arch* at the sides and back-part of the Spinal Canal, much thicker and stronger than in the True Vertebræ.

The

The *two Oblique Processes* belonging to this Bone, facing backwards, to correspond with the two inferior Processes of the last Lumbar Vertebra.

A *large Oblong Process* on each side of the Bone, formed by the concretion of all the original Transverse Processes.

The upper lateral parts of the Bone, which correspond with the three superior Transverse Processes, divided into *two irregular Cavities* on each side, by a *perpendicular Ridge*.

The *anterior* of the two Cavities lined with *Cartilage*, which glues this Bone to the Os Ilium, and in such a manner as not to allow any motion.

The *posterior* Cavity, *rough and irregular*; and in the recent Subject, full of *Ligamentous Fibres* and *Cellular Substance*, which are included in the general Capsular Ligament, and also assist in fixing the two Bones to each other.

The *Spinous Processes*: The three uppermost commonly *distinct*, but remarkably *short*: There is a great variety, however, in the number and appearance of the Spinous Processes in different Bones, and consequently of the length of the complete part of the Spinous Canal.

Four Pair of large Holes on the *anterior Surface* of the Bone, at the end of the Lines already described, and *Grooves* running out from the Holes, for the passage of the Sacral Nerves.

Four Pair of Holes on the *posterior Surface*, not much smaller than those seen anteriorly; but so filled with Cellular Substance, and covered with Membranes in the recent Body, as to admit small Nerves only to pass out to

the

the Muscles on the back-part of the Pelvis, and minute Arteries to enter to the Cauda Equina.

A *Notch* at the under end of each side of the Bone, or a *Hole* common to it and the Os Coccygis, for the passage of the last Spinal Nerve.

The *Substance* of the Os Sacrum, like that of the other Vertebrae, very *spongy*, and covered only by a thin external Plate; this, however, rendered considerably stronger by a Ligamentous Membrane which adheres to it.

The *Connection* of this Bone above to the last Lumbar Vertebra, in the way the other Vertebrae are connected to each other, and the same motions allowed as to these Vertebrae.—The projection formed between these two Bones anteriorly, obtains the name of *Promontory* or *Greater Angle* of the Os Sacrum.

In the Fœtus, the Os Sacrum is composed of five distinct Vertebrae, which have Intervertebral Cartilages similar to those of the True Vertebrae.

At this time, each of the Vertebrae of the Os Sacrum, as well as of the True Vertebrae, consists of a Body and two lateral parts, which are joined together by Cartilages.

Os COCCYGIS.

The Os Coccygis, or *Rump-bone*, compared in *shape* to the Beak of a Cuckoo.

The *Situation* of this Bone at the end of the Os Sacrum.

Its *Figure*, broad and flat above, and tapering below; convex behind, and forming a curve forwards, which supports the Intestinum Rectum.

The

The *four pieces* of which it is composed in Young Subjects.

The Bone considered by some Authors as being formed of *three pieces*; and then the Os Sacrum said to have *six pieces*.

The *first* or *uppermost piece* the *largest*, with Shoulders reaching farther than the end of the Os Sacrum. This regarded by some as a proper distinction between the Os Coccygis and Os Sacrum.

From the back-part of the Shoulders, *two Cornua* frequently ascend to join the Forked Spinous Process at the end of the Os Sacrum, to form a passage for the transmission of the last Pair of Spinal Nerves.

The *three lower Bones* of the Os Coccygis becoming gradually smaller, the *fourth* terminating in a *rough point*.

A *Cartilage* is interposed between the different pieces of this Bone in Young Subjects; joining them together, after the manner of the Vertebrae; allowing motion upon each other forwards and backwards, but chiefly between the first and second pieces; and a greater degree of motion there in the Female than in the Male.

In advanced life, but earlier in Men than in Women, the pieces grow together so as to admit of no motion; but this circumstance takes place much later between the first and second, than between the other pieces.

The *Substance*, like that of the Os Sacrum, *spongy*, but differing from it in having no passage for Spinal Marrow, nor Holes for Spinal Nerves.

The *Connection* of this Bone, in Young Subjects, to the

Os Sacrum, by *Cartilage*.—In Old People, by an *union* of Substance.

The Surface of the Bone is covered by a strong Ligament, which adds to its strength; and its sides give rise to numerous Muscular Fibres, which, while they derive their origin from it, serve at the same time to protect it.

In the Foetus, the Os Coccygis is almost entirely composed of Cartilage.

PELVIS.

THE PELVIS, or *Bones compared to a Basin*, situated at the lower part of the Trunk, and formed by the Os Sacrum, Os Coccygis, and two *Ossa Innominata*.

OS INNOMINATUM.

The *Situation* of the Os INNOMINATUM, or *nameless Bone*, in the fore-part and side of the Pelvis, and in the under and lateral part of the Abdomen.

The *Division* of the Bone, in Children, into *Os Ilium*, *Os Ischium*, and *Os Pubis*.

In the Adult, the three Bones are *ossified together*, but retain their original names.

OS ILIUM.

The *Os Ilium*, or *Haunch-bone*, forming the upper part of the Os Innominatum, and spreading out to assist in supporting the contents of the Abdomen.

The

The *Dorsum*, or *outer convex Surface* of the Bone, raised in some parts and depressed in others, where the Glutei Muscles have their origin.

The *Spine*, or upper semicircular edge of the Bone, for the attachment of the Oblique and Transverse Abdominal Muscles.

The *anterior superior Spinous Process*, or anterior extremity of the Spine, for the attachment of the Sartorius Muscle and POUPART'S Ligament.

The *anterior inferior Spinous Process*, a little below the former, for the attachment of the Rectus Femoris Muscle.

The *two posterior Spinous Processes*, at the back-part of the Spine, less considerable than the two anterior; partly for the origin of Muscles, but chiefly for the attachment of Ligaments which belong to the Joint between this Bone and the Os Sacrum.

The *Niche* of the Os Ilium under the posterior inferior Spinous Process, for the passage of the Pyriform Muscle, the Sciatic Nerve, and Blood-vessels.

The *Venter*, or *inner concave Surface* of the Bone, for the attachment of the internal Iliac Muscle, and the support of a portion of the Intestinum Iiium and Colon.

A *Passage* in the Venter for the principal Medullary Vessels of the Bone.

A *Depression* at the inside of the anterior inferior Spinous Process, where the Flexor Muscles of the Thigh, and the anterior Crural Vessels and Nerves pass.

The *Linea Innominata* at the under part of the Venter of the Bone, forming the lateral portion of the Brim of

the Pelvis, and the line of division between the Pelvis and Abdomen.

The *inner and back part* of the Bone, very *irregular*, for the origin of some of the large Muscles of the Back, for the attachment of Ligaments which go to the Os Sacrum, and for the firm connection which subsists between this Bone and the Os Sacrum.

The *under, fore, and outer part* of the Bone, forming the upper and back part of the Acetabulum, or Cavity for the articulation of the Thigh-bone.

OS ISCHIUM, or *Hip-bone*.

The *Situation* of the Os Ischium in the lowest part of the Pelvis.

Its *Figure, irregular*; its *Size*, next to that of the Os Ilium.

The *upper thick Part* of the Bone, forming the under part of the Acetabulum.

The *Spinous Process* sent back from the upper part of the Bone, for the attachment of Muscles, and of the superior Sacro-sciatic Ligament.

The *Cervix* placed under the Spinous Process, and covered with Cartilage where the tendon of the Obturator Internus Muscle plays.

The *Tuberosity, or Tuber Ischii*, forming the part on which the Body rests in sitting, and giving attachment to the inferior Sacro-Sciatic Ligament, and to the greater part of the Flexor Muscles of the Leg.

The *Crus*, which goes obliquely upwards and forwards,
and

and gives attachment to the Crus Penis and its Erector, and to part of the Adductor Muscles of the Thigh.

Os PUBIS, or *Share-Bone*.

The *Situation* of this Bone at the upper and fore part of the Pelvis.

Its *Size*, the least of the three portions of the Os Innominatum.

The *thick* and *strongest* part of the Bone, forming the upper and fore side of the Acetabulum.

The *smaller* and *hollow* part of the Bone, rendered smooth by the passage of the Flexor Muscles of the Thigh, and of the anterior Crural Vessels and Nerves.

The rough *Crest*, or *Angle* of the upper and fore part of the Os Pubis, where the Rectus and Pyramidalis Muscles, and the inner end of POUPART'S Ligament, are attached.

A *Ridge* extended from the Crest, along the upper and inner edge of the Bone, to form, with a similar Ridge of the Os Ilium, the Brim of the Pelvis.

Another *Ridge* below the former, extended downwards and outwards towards the Acetabulum.

A *Cavity* below these Ridges, for the origin of the Pectineus Muscle.

A *Niche* at the upper and inner part of the Foramen Thyroideum, formed into a Hole in the Subject, by the addition of the Obturator Ligament, for the passage of the Obturator Vessels and Nerves.

The *inner* end of the Bone, *rough* and *unequal*, but covered with a Ligamentous Cartilage, which, in fresh

Bones, joins the two *Ossa Pubis* so firmly together, as to prevent them from moving upon each other.

The *Crus* of the Bone, which goes downwards to join the *Crus* of the *Os Ischium*, and form, along with that *Crus*, one side of the Arch of the Pubis.

The *Foramen Thyroideum*, or Shield-like Hole, formed by the *Os Pubis* and *Os Ischium*, and in the Subject, filled by a Membranous Ligament, excepting at the Niche above mentioned, which gives origin to a large share of the *Obturator Muscles*.

The *Acetabulum*, or *Cavity*, (compared to a Vinegar-measure used by the Ancients), placed farther out than the *Foramen Thyroideum*, and formed by the three pieces which compose the *Os Innominatum*, in such a manner, that the *Os Ilium* constitutes near two fifths, the *Os Ischium* more than two fifths, and the *Os Pubis* one fifth of that *Cavity*.

The *Brim* of the *Acetabulum* very deep, especially behind, and made still deeper in the Subject, by being tipped with a *Cartilaginous Ligament*.

Round the *Base* of the *Brim*, the Bone rough, where the *Capsular Ligament* of the Joint is fixed.

A *Breach* in the inner and fore part of the *Acetabulum*, which, in the Subject, has a strong Ligament stretched from one end to the other, but leaving a Hole behind for containing part of the Substance called *Gland of the Joint*.

The *Cavity* of the *Acetabulum* lined with *Cartilage*, excepting at its under, inner, and fore part, where there is a rough Surface for containing the greater part of the Substance mentioned above.

The

The *Brim* or *upper opening* of the Pelvis, approaching to a Circular form in the Male, and to an oval one in the Female.

The *Inferior Opening*, large in the Skeleton, but in the Subject filled up, in a great measure, by Ligaments and Muscles, which support and protect the contained parts, and leave only the passages from the Bladder of Urine and Rectum in the Male, and, together with these, the passage from the Uterus in the Female.

The *Ossa Innominata*, *joined behind* to the Os Sacrum by a *thin Cartilage* and by *strong Ligaments*, so as to have no motion; the Joint obtaining the name of *Posterior Symphysis*.

The *Connection* of these Bones to each other anteriorly, by a *Ligamentous Cartilage* and *Ligaments*, which also prevent motion here. This Connection termed *Symphysis*, or *Anterior Symphysis of the Pubis*.

In the Fœtus, the Spine of the Os Ilium, and that part of the Bone which belongs to the Acetabulum, are Cartilaginous.—The Spinous Process, the Tuberosity, and Crus of the Os Ischium;—the Crus of the Os Pubis, and that portion of it which forms the Acetabulum, are also, at this period, in a Cartilaginous state.

THORAX, OR CHEST.

THE *Thorax*, formed of the Sternum before, of the Ribs on each side, and of the Dorsal Vertebræ behind.

The general *Figure* of the Thorax approaching that of a *Cone*, but left open above for the passages to the Lungs and Stomach, and for the great Blood-veffels.

The *Lower Part* of the Thorax *slanting*, the *fore-part* being considerably shorter than it is behind.

The *Under Margin* on each side, forming a curved Line, the convex side of which is turned downwards.

The under end of the Thorax, occupied, in the Subject, by the *Diaphragm*, which forms a Partition between it and the Abdomen.

COSTÆ, OR RIBS.

The *Situation* of the Ribs, *slanting* downwards with respect to the Spine.

Their *Number*, commonly *twelve* on each side, though sometimes thirteen, and at other times only eleven; the number of the ^{Dorsal} Vertebræ always corresponding with that of the Ribs.

Their *Figure*, *convex* externally, by which their strength is increased; and *concave* and *smooth* internally, with their flat sides turned towards the Lungs to protect them.

The *Head* of each Rib formed into a *Ridge* and *two hollow Surfaces* covered with Cartilage, to be articulated with
the

the bodies of two Vertebrae and their intermediate Cartilage.

Round the Head, the Bone *spongy*, for the attachment of the Capsular Ligament of the Joint.

The *Tubercle* of the Rib, at a little distance from its Head, with a flat surface and irregular Edge, to be articulated to the Transverse Process of the undermost of the two Vertebrae, to which the head of the Rib is joined.

The *Cervix* of the Rib, between its Head and Tubercle, of a roundish form.

Another *small Tubercle* in most of the Ribs, at the outer side of the former, for the attachment of Ligaments which fix the Ribs to each other and to the Transverse Processes, and for the insertion of the outer Slips of the Longissimus Dorsi Muscle.

Beyond the Tubercle, the Rib rendered *flat* by the Sacro-lumbalis Muscle.

The *Angle* of the Ribs to which the Sacro-lumbalis is fixed, where the Bones are about to bend, to form the lateral part of the Thorax.

The Rib becoming *broader* and *flatter* where it forms the lateral part of the Thorax, and the flat Surface opposed to the Lungs.

The *upper Edge* of the Rib, *round* where the Intercostal Muscles are fixed.

The *under Edge*, *sharp* where the external Intercostal Muscle is fixed.

A *Fossa* at the inside of the under Edge, for lodging the Intercostal Vessels and Nerve.

The *Fossa* *awanting* towards the extremities of the Ribs,
the

the Vessels not being in contact with them behind, and too small to impress them anteriorly.

An *Oval Pit* in the anterior extremity of the Rib, for receiving the Cartilage which runs from it to the Sternum.

The *Cartilages* of the Ribs, placed between them and the Sternum.

The Cartilages, like the Ribs, *flat* on their outer and inner Surfaces, and *smooth* where they are opposed to the Lungs.

The Cartilage of each Rib, forming, with the Rib itself, a *Curve* with the concave part upwards,

And with the Sternum, an *obtuse Angle* above, and an *acute one* below.

The Ribs *connected behind* to the Vertebræ, by a double articulation, and *before* to the Sternum by the Cartilages, or by the Cartilages to each other, in such a manner as to allow motion upwards and downwards, though only a small degree in any single Rib, and that towards its middle; but no motion in any other direction.

PECULIARITIES of the RIBS.

The *first Rib* the *most crooked*; from this downwards the ribs becoming gradually straighter.

The *uppermost Ribs* approaching nearer to the horizontal situation; their obliquity, with respect to the Spine, increasing as they descend, and their anterior extremities becoming more distant from each other.

The *Cartilages* of the Ribs, like the Ribs themselves, becoming gradually longer, but, contrary to what happens

in the Ribs, approaching nearer to each other in their descent.

The *length* of the Rib, *increasing* from the first to the seventh, and then *decreasing* to the twelfth Rib.

The *distance* between the heads of the Ribs and their Angles, increasing to the ninth Rib, corresponding with the breadth of the Sacro-lumbalis Muscle which covers it.

Division of the Ribs into True and False.

The *True Ribs*,—the seven uppermost,—having their Cartilages joined to the Sternum, and opposed to the Heart and Lungs, from which they are termed the *True Custodes*, or *Guards of Life*.

The *False*, or *Bastard Ribs*,—the five inferior,—not reaching the Sternum.

The *Cartilages* of the False Ribs, *shorter* as they descend.

The *posterior Extremity* of the first Rib, *articulated only with the first Vertebra*.

A *flat Surface* upon the upper part of the first Rib, where the *Subclavian Vessels* pass over it to the arm.

The *Fossa* for the Intercostal Vessels, wanting at the edge of this Rib.

The *Cartilages* of the two under True Ribs, and three upper False Ribs, *joined* to each other by an union of Substance.

The *Head* of the eleventh Rib, *having no Tubercle* for articulation, being only loosely joined to the Transverse Process.

The twelfth Rib, *much shorter* than the rest;—its Head is only joined to the twelfth Vertebra of the Back. It has

no Tubercle, nor articulation with the Tranſverſe Proceſs; neither has it any Foffa at its under edge, the Veſſels running ſome way below it.

The *Anterior Extremities* of the eleventh and twelfth Ribs, not joined to each other, nor to any other Rib, but lying looſe among the Muſcles;—hence ſometimes named *Floating Ribs*.

STERNUM, OR BREAST-BONE.

The *Situation* of the Sternum in the fore-part of the Thorax.

Three Pieces compoſing the Sternum, in a perſon of middle age, and theſe joined together by Cartilage.

The different pieces of this Bone frequently found *offi-ſied together* in old people.

The Sternum, *thick and broad above, and thin and narrow below.*

The *outer Surface, flat.*

The *inner Surface, ſlightly hollowed*, to enlarge the Cavity of the Thorax.

Pits upon each edge of the Sternum, to receive the Cartilaginous ends of the ſeven True Ribs.

The *Pits* at a conſiderable diſtance from each other above, but becoming gradually nearer as they deſcend.

The *Cancelli* of the Sternum, covered only by a thin external plate; but this rendered ſtronger by a Tendinous Membrane inveſting it in the recent ſtate.

The *upper piece* of the Sternum, of a ſomewhat *triangular* figure, compared to that of a heart as painted on playing-cards, but cut acroſs below.

The

The *upper* and *back part hollowed*, to make way for the Trachea.

The *upper Corners*, *thicker* and *stronger* than the rest of the Bone, with a *Cavity* in each, for receiving the ends of the Collar Bones.

Under these Cavities, the Bone becoming *thinner*, and having a *Pit* upon each side, for receiving the Cartilage of the first Rib.

Part of a *Pit* in the *under Corner* of the first piece, for the Cartilage of the second Rib.

The *second piece* of the Sternum, of an *oblong* form, but a little broader below than above, and considerably longer than the former.

Complete Pits upon the edge of this piece, for the Cartilages of the third, fourth, fifth, and sixth Ribs, and part of the *Pits* for those of the second and seventh.

Lines extending between the Pits, denoting the original marks of division of this piece.

The *Connection* of the second piece of the Sternum to the first by Cartilage, which, in the earlier period of life, allows some yielding, but this becoming gradually less as the person advances in life.

The *third piece* of the Sternum, *cartilaginous* in a Young Subject, and pointed like a broad-sword, hence termed *Cartilago Ensiformis*.

In the Adult, this piece commonly *ossified* in the middle, and *cartilaginous* at the edges.

The *Size* of this piece *much less* than that of the other two.

Only

Only *one half* of the Pit, for the Cartilage of the seventh Rib, formed in the side of this Piece.

The *Variations* of the Cartilago Ensiformis considerable in different Subjects;—for, instead of the common form, it is sometimes narrow like the point of a small-sword, or turned obliquely to one side, or forwards, or backwards; or forked at the point, or perforated in the middle.

The Sternum *joined* by Cartilage to the seven upper or True Ribs, and by an interarticular Cartilage to the anterior ends of the Clavicles.

In the Fœtus, the Bone is composed of seven or eight pieces, but the number of these varies in different Subjects.

SUPE-

SUPERIOR EXTREMITIES.

THE *Superior Extremities*, composed of the Bones of the *Shoulders, Arms, and Hands.*

The *Shoulder*, consisting of the *Clavicle* and *Scapula.*

CLAVICLE, or *Collar-Bone.*

The *Situation* of the *Clavicle*, between the upper part of the *Sternum* and top of the *Scapula*, where it acts as a beam supporting the *Shoulder*, and bearing it off the *Trunk* of the *Body.*

The *Sternal*, or internal *Extremity*, *triangular*, and *larger* than the *Body*, with one of the angles elongated backwards, where it gives origin to a *Ligament* extended between the two *Clavicles.*

The *Surface* next the *Sternum*, *irregularly hollowed*, to correspond with the *Interarticular Cartilage*, which, with the *Capfular Ligament* of this *Joint*, allows a small degree of motion in all directions.

The *body* of the *Bone* next the *Sternum* *bent forwards*, and that next the *Shoulder* *turned back*, in form of an *Italic s*, or like a *key* used by the *Ancients*; from which, or from the support it gives the *Shoulder*, its name is derived.

The upper part of the *Clavicle* next the *Sternum*,
rounded,

rounded, and that next the Scapula, *flat* where it lies over the Joint of the Humerus.— Over the Bone in general, rough marks are observed for the attachment of Muscles and Ligaments.

The under Surface *hollow*, for lodging a portion of the Subclavian Muscle.

The *External* or *Scapulary Extremity*, tipped with Cartilage, to be articulated with the Acromion of the Scapula.

SCAPULA, or *Shoulder-Blade*.

The *Situation* of the Scapula, upon the upper and back part of the Thorax, at some distance from the Ribs, the interval being filled up by a cushion of Flesh.

The *shape* of the Scapula, *triangular*, and one of the angles placed downwards.

The *Venter*, or inner Surface, *concave*, corresponding with the convexity of the Ribs, and marked with *Ridges* and *Depressions* by the Subscapularis Muscle.

The *Dorsum*, or outer Surface of the Scapula, rendered *convex* in some parts, and *concave* in others, by the action of the Muscles which cover it.

The body of the Scapula, *remarkably thin*, and, in an Old Person, *transparent*.

The *Edges* of the Bone, *thick* and *strong*, and termed *Costæ*.

The superior *Costa*, the *shortest* of the three, and placed nearly opposite to the second Rib.

A *Semilunar Notch* near the fore-part of the superior
Costa,

Costa, for the passage of the superior Scapulary Vessels and Nerves.

The *inferior* or *anterior Costa*, extending obliquely downwards and backwards, between the third and eighth Ribs.

The *posterior Costa*, or *Base* of the Bone, placed obliquely with respect to the Spine, the upper end being considerably nearer to it than the under.

The *upper part of the Base*, above the Spine, running obliquely forwards to the upper angle, and giving attachment to the Levator Scapulæ Muscle.

The *inferior Angle*, very acute, and marked by the passage of the Latissimus Dorsi, and the origin of the Teres Major Muscle.

The *superior Angle*, approaching a right one.

The *anterior Angle*, forming the *Cervix* which supports the *head* of the Bone.

The *Glenoid Cavity*, placed on the fore-part of the head of the Bone, and lined with Cartilage for the articulation of the Os Humeri.

The *shape* of that Cavity, resembling that of an Egg cut longitudinally, with the large end undermost, but so shallow as to receive only a small portion of the Ball of the Os Humeri, the rest of the Ball being contained in the Capsular Ligament.

The *Spine*, running across the Bone, and dividing it into a small upper, and large under Surface.

The Spine, *small* at its beginning, and becoming *higher* and *broader* in its course forwards.

A *triangular Space*, between the root of the Spine and Base of the Bone, where part of the Trapezius Muscle is fixed.

The *Fossa Supra-spinata*, or space above the Spine, for the origin of the Supra-spinatus Muscle.

The *Fossa Infra-spinata*, for the origin of the Infra-spinatus Muscle.

The Spine becoming broad and flat, and terminating in a point, at its anterior extremity, where it is termed *Acromion*, or Top of the Shoulder.

The under Surface of the Acromion, *hollow* for the passage of the Spinati Muscles.

The *Situation* of the Acromion over the Joint of the Humerus, which, together with the Ligaments, contributes to its protection.

The anterior Edge of the Acromion, *tipped with Cartilage* for its articulation with the outer end of the Clavicle, where very little motion is allowed.

The *Coracoid*, or *Crow's-beak-like Process*, arising from the neck of the Bone, and making a curvature forwards, so as to leave a hollow at its root for the passage of the Subscapularis Muscle.

The *Point of this Process*, giving origin to Muscles, and to a strong Ligament which passes transversely from its side, to be fixed to the Acromion, for the protection of the Joint.

The Scapula, articulated with the trunk of the Body, by means of the Clavicle, which allows it to play in all directions.

OS HUMERI, or *Arm-bone*.

The *Situation* of the Os Humeri at the side of the Thorax, and under the Scapula.

The *Ball*, or *Head* of the Os Humeri, forming a small Segment

Segment of a large Sphere, and this covered with Cartilage, and placed at the upper, inner, and back part of the body of the Bone, to correspond with the Glenoid Cavity of the Scapula.

The *Cervix*, or *Neck* furrounding the edge of the Ball, and forming a superficial Fossa, where the Capsular Ligament is fixed, which allows the Bone an extensive motion in all directions.

Numerous Holes round the upper end of the Bone, for the insertion of the Fibres of the Capsular Ligament, and for the passage of Blood-vessels into the Bone.

A *Groove*, or long *Fossa*, lined with Cartilage, in the upper and fore part of the Bone, for lodging the Tendon of the long head of the Biceps Muscle.

The *smaller Tubercle*, placed at the upper and inner side of the above-mentioned Groove, for the attachment of the Subscapularis Muscle.

The *larger Tubercle*, opposite to the former, and on the outer side of the Groove, for the attachment of the Muscles which cover the Dorsum of the Scapula.

A *Ridge* continued down from each Tubercle along the sides of the long Fossa, for the insertion of Muscles coming from the trunk of the Body, or from the Scapula.

A *Passage* slanting downwards in the fore and inner part of the Bone, near its middle, for the Medullary Vessels.

The Bone, marked at the *under end* of the *Groove* for lodging the long head of the Biceps Muscle, by the attachment of the Deltoid and other Muscles.

The Body of the Bone, *round* near its upper end; but,

as it descends, appearing *twisted*, then *flat*, and increasing in breadth at the lower extremity.

From the Muscular Prints on the fore-part of the body of the Bone, a *blunt Ridge* continued to the upper part of the Trochlea.

The under and back part of the Bone, rendered *flat* and *smooth*, by the motion of the Triceps Extensor of the Fore-arm.

A *large Ridge* at the under and outer, and a *small Ridge* at the under and inner edge of the Bone, for the attachment of strong Tendinous Fasciæ, which give origin to part of the Muscles of the Fore-arm.

The Ridges ending below in two Condyles.

The *external Condyle*, placed at the under and outer part of the Bone, for the origin of the Extensor Muscles of the Hand and Fingers.

The *internal Condyle*, at the under and inner part of the Bone, more prominent than the former, for the origin of the strong Flexor Muscles of the Hand and Fingers.

The *articulating Surface* at the under end of the Bone, between the Condyles, covered with Cartilage for the articulation with the Bones of the Fore-arm.

The *oblique Situation* of the articulating Surface, the inner end being lower than the outer, by which the Hand turns more readily to the upper parts of the Body.

The *inner Part* of the articulating Surface, consisting of a large internal, and small external eminence, with a middle Cavity, or a Trochlea, upon which the Ulna moves.

The *outer Part* of the Articular Surface, upon which
the

the head of the Radius moves, of a round form, and considered by some authors as the smooth part of the outer Condyle.

Round the edge of the Articular Cavity, the Bone marked by the insertion of the Capsular Ligament of the Joint.

A *small Cavity* at the under and fore part of the Bone, above the Trochlea, for receiving the Coronoid Process of the Ulna in the Flexion of the Fore-arm.

A *large Cavity* at the under and back part of the Bone, also above the Trochlea, the under part of it for receiving the Olecranon of the Ulna in the extension of the Fore-arm, and the upper part for containing the Fat of the Joint.

Between these Cavities, the Bone pressed so thin as to become transparent, especially in an Old Person.

FORE-ARM,

Consisting of two Bones, the *Ulna* and *Radius*.

ULNA, or *Cubit*.

The *Situation* of the Ulna at the inner part of the Fore-arm, the Arm being supposed to hang by the side of the Body, with the Palm of the Hand turned forwards.

The *Olecranon*, *Processus Anconæus*, or *Top of the Cubit*, placed at the upper end of the Bone, and forming the posterior prominent part of the Elbow.

The upper end of this Process, *rough* where the Triceps Extensor Cubiti Muscle is fixed.

The *Coronoid*, or *sharp Process*, at the upper and fore part of the Bone, but considerably lower than the Ole-

cranon, for forming a part of the hinge of the Joint of the Elbow.

The *Great Sigmoid*, or *Semilunar Cavity*, between the Olecranon and Coronoid Process, lined with Cartilage, and divided into two slanting Surfaces by a middle Ridge: the Cavity, adapted to the Trochlea of the Os Humeri, and with it forming a *complete Hinge*, which allows an extensive degree of flexion, and as much extension as to approach a straight line with the Upper Arm; but little or no rotation.

Across the middle of the great Sigmoid Cavity, a *little Pit* for lodging part of the Fat of the Joint.

The *Small Sigmoid*, or *Semilunar Cavity*, lined with Cartilage, at the outer side of the Coronoid Process, where the round head of the Radius plays.

The *Tubercle* of the Ulna, or small rough spot under the root of the Coronoid Process, for the insertion of the Brachialis Internus Muscle.

At the upper and outer part of the Bone, a *triangular Surface*, where the Musculus Anconæus is lodged.

The *Body* of the Ulna, of a *triangular form*, and becoming gradually smaller in its descent.

The *sharpest Angle*, opposed to the Radius for the attachment of the Interosseous Ligament.

The sides forming this Angle, *flat*, and *marked* by the Muscles which originate from them.

A *Passage* slanting upwards, about a hand-breadth below the upper end, for the Medullary Vessels.

The under end of the Bone, forming a *small round Head*, which is covered with Cartilage on that side where the
Radius

Radius moves upon it, and also on its extremity, where it is opposed to a moveable Cartilage placed between it and the Carpus.

The *Styloid Process*, at the inner side of the small round head, from which a strong Ligament goes off to be fixed to the Bones of the Wrist.

RADIUS.

The *Situation* of the Radius at the outer Part of the Fore-arm.

The *upper End of the Radius*, covered with Cartilage, and formed into a circular head, which is hollowed above, for receiving the outer part of the Articular Surface of the Os Humeri, where it bends, and extends upon that Bone along with the Ulna.

The *inner Side of the Head*, smooth, and also covered with Cartilage, where it plays upon its own axis in the small Semilunar Cavity, at the outer side of the Ulna.

The *Cervix* of the Radius, smaller than the head, surrounded, in the Subject, by a circular Ligament which keeps the Bone in its place, and allows it to roll upon the Ulna.

The *Tubercle* of the Radius, at the under and inner part of the Cervix, for the insertion of the Biceps Flexor of the Arm.

The *Body* of the Bone, larger than that of the Ulna, convex on its outer and back part, and rounded by the Muscles which cover it.

The *Surfaces* next the Ulna, *flat*, where Muscles of the Hand take their origin.

The *anterior* and *posterior Surfaces*, terminating in a *sharp Ridge*, to which the Interosseous Ligament of the Fore-arm is fixed.

A *Passage* slanting upwards, for the Medullary Vessels, on the fore-part of the Bone, and about a hand-breadth below its upper end.

A *rough Surface* at the outer and middle part of the Bone, for the insertion of the Pronator Radii Teres.

The *lower End of the Radius*, becoming gradually larger, and flat on its fore-part, where it is covered by the Pronator Radii Quadratus Muscle.

A *Ridge* upon the under and back part of the Radius, with a *Fossa* upon each side of it, where the Tendons of the Extensor Muscles of the Fingers pass.

The outer side of this extremity of the Bone, *hollowed* by the Extensors of the Thumb.

A *semilunar Cavity* at the inner side of the under end of the Radius, lined with Cartilage for receiving the corresponding extremity of the Ulna upon which the Radius rolls, carrying the Hand along with it.

The *lower End* of the Bone formed into a *Cavity* of an *oval* or *navicular form*, and lined with Cartilage for receiving the two first Bones of the Carpus.

The under and outer part of the Radius, forming a *Process* somewhat similar to the Styloid Process of the Ulna.—From this Process a Ligament is sent to the Wrist.

HAND,

HAND,

Composed of the Bones of the *Carpus*, *Metacarpus*,
and *Fingers*.

The *posterior Surface* of the Hand, *convex*, which gives it a greater degree of strength.

The *anterior Surface* of the Hand, *concave*, for grasping and holding Substances.

CARPUS, or *Wrist*,

Composed of eight Bones, which form two Rows.

In the first Row are,

The *Os Scaphoides*, *Lunare*, *Cuneiforme*, *Pisiforme*.

In the second Row,

The *Os Trapezium*, *Trapezoides*, *Magnum*, *Unciforme*.

The *posterior Surface* of the *Carpus*, *convex*, and marked by the numerous Ligaments attached to it.

The *anterior Surface* *hollow*, and also marked by Ligaments.

The Surfaces of the Bones of the *Carpus*, articulated with each other, or with the neighbouring Bones, and covered with *Cartilage* to facilitate the motion of the Joints.

OS SCAPHOIDES, or *Boat-like Bone*, placed at the outer and upper part of the *Carpus*.

The *upper Surface*, *convex*, and articulated with the *Radius*.

The *under and outer Surface*, also *convex*, to be articulated with the *Os Trapezium*, and *Trapezoides*.

Between

Between the upper and under Cartilaginous Surfaces, a *rough Fossa* for the insertion of the Capsular Ligament.

The anterior and inner Surface, having an *oval Cavity* which gives name to the Bone, where it is articulated with the Os Magnum.

A *Process* upon the outer end of the Bone, for the attachment of part of the anterior Transverse Ligament of the Wrist.

OS LUNARE, *situated* upon the inner side of the former Bone.

The *upper Surface, convex*, for its articulation with the Radius.

The *outer Edge*, in form of a *Crescent*, from which the Bone is named, articulated with the Os Scaphoides.

The *under Surface, hollow*, for its articulation with the Os Magnum.

The *inner Surface* of the Bone, articulated with the Os Cuneiforme.

The Os Scaphoides and Os Lunare, forming an *oval Head*, which is received into the Socket of the Radius, where extensive motion is allowed forwards, backwards, and to either side.

OS CUNEIFORME, or *Wedge-like Bone*, situated on the inner side of the former one.

The *anterior Edge, thin*, in form of a *wedge*.

The *upper and outer Surface*, articulated with the Os Lunare.

The *under and outer Surface*, articulated with the Os Unciforme.

The

The *anterior* and *inner Surface*, forming a slight *convexity* for its articulation with the Os Pisiforme.

Between the upper part of this Bone and the Ulna, the *moveable Cartilage* formerly mentioned is interposed.

OS PISIFORME, or *Pea-shaped Bone*, placed upon the anterior and inner Surface of the Os Cuneiforme, and forming a Prominence which is readily felt in the Wrist, and which gives attachment to strong Tendinous and Ligamentous Substances, particularly to part of the Ligamentum Carpi Annulare.

OS TRAPEZIUM, named from the four unequal Edges of its posterior Surface.

The *Situation* of this Bone, at the root of the Metacarpal Bone of the Thumb.

The upper part of the Bone, forming a *smooth Pit*, to be articulated with the Os Scaphoides.

The inner side, *hollow*, and articulated with the Os Trapezoides.

The under Surface, forming a *Pulley* on which the Metacarpal Bone of the Thumb moves.

The anterior Surface, sending out a *Process*, which is prominent in the Palm, and marked by the Transverse Ligament of the Wrist, by the Flexor Carpi Radialis, and Flexors of the Thumb.

OS TRAPEZOIDES, so named from its being somewhat like the former Bone; though considerably smaller.

The *Situation* of the Os Trapezoides, at the inner side of the Os Trapezium.

The

The upper Surface, *hollow* where it joins the Os Scaphoides.

The outer Surface, *convex*, and articulated with the Trapezium.

The *inner Surface*, articulated with the Os Magnum.

The *under Surface*, formed into a sort of *Pulley*, to be articulated with the Metacarpal Bone of the Fore-Finger.

OS MAGNUM, or CAPITATUM, or *largest Bone* of the Carpus, placed at the inner side of the former Bone, and consisting of four oblong sides, with a round head, and triangular under end.

The *head* or *ball* of the Bone, received into the hollow Surfaces of the Os Scaphoides and Lunare, like Ball and Socket.

The *under part* of the outer side, joined to the Os Trapezoides.

The *inner side*, to the Os Unciforme.

The *under end*, opposed to the Metacarpal Bone of the Middle Finger.

OS UNCIFORME, or *Hook-like Bone*, placed in the under and inner part of the Wrist.

The *upper* and *inner Surface*, articulated with the Os Cuneiforme.

The *outer Surface*, articulated with the Os Magnum.

The *inferior Surface*, opposed to the Metacarpal Bones of the Ring and Little Fingers.

The anterior Surface, sending out the *Unciform Process*, which gives name to the Bone.

The

The Unciform Process, *curved* for the passage of the Flexor Muscles of the Fingers.

The Articulation between the first and second Row of Carpal Bones, allowing motion to each side, but chiefly forwards and backwards; the motion, however, less extensive than between the Fore-arm and Wrist.

In the Fœtus, the Bones of the Carpus are in a Cartilaginous state.

METACARPUS, or *Part annexed to the Carpus,*

Consisting of *four Bones* for supporting the Fingers, and one for the Thumb.

Metacarpal Bones of the
—Fingers.—

Their *bodies*, long and round.

The *extremities* of these Bones, considerably larger than their bodies.

The *upper ends* or *bases*, *flat* where they are articulated with the Bones of the Carpus.

The flatness of this end of the Metacarpal Bones, and their strong connecting Ligaments, rendering the motions here inconsiderable.

Round the edges of the Cartilaginous Surfaces, at the upper end, the *depressions* where the Capsular Ligaments are fixed.

The sides of the upper ends, *flat* where they are articulated with each other.

A *Ridge* at the upper and back part of their bodies,
with

with a depression on each side of it, formed by the Interossei Muscles.

The under and back part of their bodies, made *flat* by the motion of the Tendons of the Extensors of the Fingers.

The anterior Surface of their bodies, *concave*, and rendered *flat at the sides* by the Interossei Muscles.

The *lower ends*, or *heads*, formed into *Balls*, which are flattened upon their sides by their motions upon each other.

At the fore-part of each side of the heads, a little *prominence*, for the attachment of the Ligaments which fix these Bones to each other.

Round the heads, a *depression* for the insertion of the Capsular Ligaments.

PECULIARITIES of the METACARPAL BONES of the FINGERS.

The *Base* of the *Metacarpal Bone of the Fore-finger*, opposed to, and corresponding with, the Os Trapezoides, and partly with the Trapezium.

The inner part of the *Base*, forming a *Ridge*, which is articulated with the Os Magnum, and with the next Metacarpal Bone.

The connection of the *Base* so firm, that it has little or no motion.

The *Metacarpal Bone of the Mid-finger*, commonly the *second in length*.

The *Base* of the Bone, commonly slanting inwards and downwards, opposed to the Os Magnum.

The

The outer and back part of the Base, *projecting*, and forming a sort of *Process*, the external Surface of which is connected with the Ridge of the former Bone.

The motion of this Bone little more than that of the former one.

The *Metacarpal Bone of the Ring-finger*, *shorter* than the former Bone.

Its Base, *femicircular* where it is opposed to the Os Unciforme.

The motion something greater than that of the former Bone.

The *Metacarpal Bone of the Little Finger*, the *smallest* of the four.

The Base, which slants downwards and outwards, opposed to the under and inner part of the Os Unciforme..

The inner part of the Base having no smooth Surface, not being contiguous to any other Bone.

From the nature of the Joint, the looseness of the Ligaments, and from the existence of a proper Muscle here, this Bone possesses a larger share of motion than any of the rest.

The *Metacarpal Bone of the Thumb*, having the general resemblance of those of the Fingers, but differing from them in being placed oblique with respect to the Metacarpal Bones of the Fingers, and in some measure opposing them.

This Bone thicker and stronger, but shorter than those of the Fingers.

The *Base* of this Bone articulated with the Pulley formed by the Trapezium, the Bone appearing to admit of flexion

flexion and extension only; but, from the looseness of the Ligaments, enjoying the same kind of motion with Joints formed after the manner of Ball and Socket.

The *inferior extremity* of the Bone, considerably *flatter* than those of the other Metacarpal Bones.

The FINGERS, *composed* each of three Bones, and the three Rows of Bones termed *Phalanges*.

The different Phalanges, *tapering* a little as they descend, and their Bases larger than their inferior extremities.

The posterior Surfaces, *convex*, and covered chiefly by the tendinous expansions of the Extensors of the Fingers.

Their anterior Surfaces, *flat*, and in some parts *concave*, for lodging the Tendons of the Flexor Muscles.

Ridges at the sides of their anterior Surfaces, for the attachment of the retaining Ligaments of the Tendons of the Flexor Muscles.

The first Phalanx, *longer* than the second, and the second than the third.

The *Bases* of the first Phalanx, formed into *Sockets* to receive the Balls of the Metacarpal Bones, and to allow motion to all sides.

The lower ends of this Phalanx, consisting of *lateral Prominences*, and *middle Cavities* or Pulleys, the Cartilaginous Surfaces of which reach considerably farther up in the fore than in the back part.

The *Bases* of the second Phalanx, with *lateral Cavities*, and *middle Ridges*, corresponding with the Pulleys of the first Phalanx, and admitting of flexion and extension only.

The

The *lower ends* of this Phalanx, similar to those of the first.

The *Bases* of the *third Phalanx*, like those of the second, and the motions also similar.

The under ends of the third Phalanx, *rough* where the Pulpy, Vascular, and Nervous Substance of the points of the Fingers is situated.

The Peculiarities of the Bones of the Fingers consist only in their size.

The Bones of the Mid-finger the largest and longest.

Those of the Ring-finger next in length.

The Bones of the Fore-finger, next to those of the Ring-finger in length, and of the Mid-finger in thickness.

Those of the Fourth Finger the smallest.

The *Thumb*, consisting of only *two* Bones.

The *first* Bone, like the Bones of the first Phalanx of the Fingers, but *thicker* and *shorter*.

The *Cavity* at the Base of the Bone, longer from one side to the other, and shallower than the Cavities of the corresponding Bones of the Fingers, but, like them, forming a Socket for the Metacarpal Bone. From the flatness of the Joint, however, and strength of the lateral Ligaments, the motions here are confined to flexion and extension only.

The *lower end* of the first Bone of the Thumb, like that of the first of the Fingers.

The *second Bone* of the Thumb, like the *third* of the Fingers, but broader.

The *Base* of this Bone, like that of the second and third Bones of the Fingers, and like their Joints also, admitting of flexion and extension only.

INFERIOR EXTREMITIES.

THE *Inferior Extremities* composed of the Thighs,
Legs, and Feet.

The *Thigh* consisting of a single Bone, viz.

OS FEMORIS, or *Thigh-bone*.

The Os Femoris the *longest* of the Body, and *thickest*
and *strongest* of the Cylindrical Bones.

The *Situation* of the Bone, at the under and outer part
of the Pelvis.

The *oblique* Situation of the *body* of the Bone, the under
end being considerably nearer its fellow on the other side
than the upper one is, which is favourable for the passages
at the bottom of the Pelvis, for the origin of Muscles, and
for walking.

The *Ball*, or *Head* of the Thigh-bone, smooth, covered
with Cartilage, and forming almost two-thirds of a Sphere,
which is received into the deep Socket formed by the A-
cetabulum of the Os Innominatum.

A *rough Pit* at the inner part of the Ball, for the attach-
ment of the Ligamentum Rotundum, which is fixed by
its other end to the bottom of the Acetabulum.

The *Cervix*, or *Neck*, much longer than that of any
other

other Bone, passing obliquely downwards and outwards from the Ball, to allow the free motion of the body of the Bone, in different directions. It is restrained, however, in its motion outwards, by the Ligamentum Rotundum, and by the high Brim of the Acetabulum.

Numerous Holes in the Cervix, for the insertion of the Fibres of the Ligament reflected from the Capsular one.

The *Trochanter Major*, placed at the outer part of the Neck, and upper end of the Body of the Bone, for the insertion of the Extensor, Abductor, and Rotator Muscles of the Thigh.

Two rough Surfaces upon the upper and fore part of the large Trochanter, for the insertion of the two small Glutei Muscles.

A *Cavity*, placed at the inner side of the root of the large Trochanter, for the insertion of the Rotator Muscles of the Thigh.

The *Trochanter Minor*, at the under and inner part of the Cervix, for the insertion of the Flexor Muscles of the Thigh.

A *rough Line* on the fore-part of the Bone, extending obliquely between the two Trochanters, for the insertion of the Capsular Ligament.

A rough Line between the Trochanters, on the *back-part* of the Bone, for the insertion of the Capsular Ligament, and of the Quadratus Femoris Muscle.

The *Body* of the Thigh-bone, *bent forwards*, and a *little outwards*, of a *roundish form* above, but somewhat *triangular* about its middle.

The *fore-part* of the Bone, *flat* where it is covered by the Crureus Muscle.

The *Sides* of the Bone, *flattened* at its middle and lower part by the two Vasti Muscles.

The *Linea Aspera*, or *ragged Ridge*, on the back-part of the Bone, extending from the Trochanters, but chiefly from the large one, to the lower part of the Bone, and giving attachment to numerous Muscles which pass from the Pelvis to the Thigh, or from the Thigh to the Leg.

The lower End of the Linea Aspera, dividing into *two Lines*, which terminate in the Condyles.

The *Canal* for the Medullary Vessels, slanting upwards, a little below the middle of the posterior part of the Bone.

The under and back part of the Bone, *flat* where the Popliteal Vessels and Nerves are placed.

The *lower End* of the Bone, much larger than its body, and perforated by many Holes, for the insertion of the Capsular Ligament of the Knee, and for the passage of the Nutritious Vessels of the Bone.

The lower End, also marked by the insertion of several Muscles.

The *Cartilaginous Trochlea* at the under and fore part of the Bone, placed obliquely, with its outer Surface larger and higher than its inner one, to be adapted to the Patella, which moves upon it.

The *external* and *internal Condyles*, continued back from the Trochlea, and also covered with Cartilage, for the motion of the Tibia.

The internal Condyle, *larger* and *deeper* than the external,

nal, to compensate for the obliquity of the Thigh, and give less obliquity to the Leg.

A *Notch* between the back-part of the Condyles, for lodging the Popliteal Vessels and Nerves.

A *femilunar rough Notch*, deeper and lower than the former one, for the attachment of the Crucial or internal Ligaments of the Knee.

LEG,

Composed of two Bones,—the Tibia and Fibula, to which may be added the Patella.

TIBIA,

Situated at the inner part of the Leg.

The *upper End* of the Tibia, forming a *large Head*, and that divided on its upper Surface into *two superficial Cavities*, for receiving the Cartilaginous part of the Condyles of the Thigh-bone.

A *rough Protuberance* between the articulating Cavities, *pitted* on its fore and back parts, for the insertion of the anterior and posterior Crucial Ligaments.

The articulating Surfaces at the upper end of the Tibia, rendered *deeper* in the Subject by the addition of two femilunar Cartilages placed upon their Edges.

The Circumference of the Head of the Bone, *rough and porous*, for the insertion of the Capsular Ligament.

The articulation of the upper end of the Tibia with the Os Femoris, of such a nature as to allow flexion and extension,

tenſion, but no lateral nor rotatory motion in the extended ſtate, though a ſmall degree of both when the Knee is bended.

A *Tubercle* at the upper and fore part of the Bone, for the inſertion of the lower Tendon or Ligament of the Patella.

A *Cartilaginous Surface* under the outer Edge of the Head of the Bone, for the articulation with the upper end of the Fibula.

The *Body* of the Bone, *triangular*, with the ſharpeſt Angle placed anteriorly.

The *anterior Angle*, called *Spine* or *Skin*, a little waved, and extending from the Tubercle to the inner Angle.

The *anterior* and *inner Surface* of the Bone, *ſmooth*, being covered with ſkin only.

The *anterior* and *outer Surface*, *hollowed*, by one of the Flexor Muſcles of the Foot, and by the long Extenſors of the Toes.

The middle of the posterior Surface, alſo *hollowed* by Muſcles which aſſiſt in extending the Foot, and in bending the Toes.

A *Ridge* extending obliquely downwards from the upper and outer part of the Bone, poſteriorly, to its inner Angle, and giving origin to part of the Muſcles which extend the Foot and bend the Toes.

A *flat Surface* above the Ridge, indicating the ſituation of the Popliteus Muſcle.

The *Canal* for the Medullary Veſſels, ſlanting downwards at the inner and back part of the Bone, a little above its middle.

The under End of the Tibia, *smaller* than the upper one, and its inferior Surface *hollow*, and covered with Cartilage, for the articulation with the Astragalus.

The *Malleolus Internus*, or *inner ankle*, produced from the inner part of the under end, and covered also with Cartilage where the Astragalus plays.

A *Pit* in the point of the Malleolus Internus, for the attachment of the internal Lateral Ligament, and a *Groove* behind, where the Tendon of the Tibialis Posticus Muscle is placed.

The *femircular Cavity*, at the under and outer side of the Tibia, for receiving the under end of the Fibula.

Round the edge of the articulating Cavity, the Bone *marked* by the infertion of the Capsular Ligament.

FIBULA,

Placed at the outer side of the Tibia, and by much the smaller of the two Bones.

The upper end of the Fibula, formed into a *large Head*, with a *superficial smooth Cavity* towards its inner side, to be articulated with the Tibia, where it is tied by Ligaments of such strength, as to allow very little motion.

The *Head* of the Fibula, *irregular* and *rough* externally, for the infertion of the Biceps Flexor Cruris, and of the external Lateral Ligament of the Knee.

The *Body* of the Bone, bent a little inwards and backwards, and unequally triangular, with the Surfaces between the Angles marked by the Muscles which arise from it, or are placed upon it.

A *Ridge* at the inner side of the Fibula, opposed to one

at the outer part of the Tibia, for the insertion of the Interosseous Ligament.

A *Canal* on the back-part of the Bone, slanting obliquely downwards, a little above its middle, for the passage of the Medullary Vessels.

The *under End* of the Fibula, *broad and flat*, to be received by the semilunar Cavity of the Tibia, where it is fixed so firmly by strong Ligaments, as to have no sensible motion.

The under end of the Bone forming the *Malleolus Externus*, or outer Ankle, which is lower and farther back than the inner Ankle.

A *convex smooth Surface* on the inner side of the Malleolus Externus, opposed to the outer side of the Astragalus, which moves upon it.

The *Coronoid Process*, sent down from the Malleolus Externus, from which Ligaments go to the Bones at the outer side of the Foot.

A *Furrow* upon the back-part of the Malleolus Externus, for lodging the Tendons of the Peronei Muscles.

PATELLA, ROTULA, OR KNEE-PAN.

The Patella, *placed* at the fore-part of the Joint of the Knee, and compared by some authors to the Olecranon of the Ulna.

The *shape* of the Patella, *triangular and flat*, or of the figure of a Heart as painted upon playing-cards.

The *anterior Surface* of the Bone, *convex*, and perforated by numerous Holes, for the insertion of Tendons and Ligaments which cover it.

The *posterior Surface*, which corresponds with the Troch-

lea of the Os Femoris, smooth, covered with Cartilage, and divided by a longitudinal prominent Ridge into two unequal Cavities.

The circumference of the articular Surface, *marked* by a *rough Line*, into which the Capsular Ligament of the Joint is fixed.

The Base, or upper part of the Bone, *horizontal*, and *marked* by the insertion of the Tendons of the Extensors of the Leg.

The back-part of the Apex, *rough* and *depressed*, for the attachment of the Ligament which passes from the Patella to the Tubercle of the Tibia.—

The Ligaments of the Patella allow it to be moved upwards and downwards; and when the Leg is extended, they admit of its motion to either side, or to be rolled.

When the Leg is extended, the Patella is lodged in the Trochlea of the Os Femoris; when the Limb is bent, it is pulled down by the Tibia, and lodged in a hollow at the fore-part of the Knee.

The Patella allows the Muscles fixed to it to act with greater advantage in extending the Leg.

It is entirely Cartilaginous at birth.

FOOT,

Composed of *Tarsus*, *Metatarsus*, and *Toes*.

TARSUS, or *Instep*,

Composed of seven Bones, viz. The *Astragalus*, *Os Calcis*, *Naviculare*, *Cuboides*, *Cuneiforme Externum*, *Cuneiforme Medium*, and *Cuneiforme Internum*.

The

The upper part of the Tarsus *convex*, the under part *concave*.

In the *Concavity*, numerous *Muscles*, *Vessels*, and *Nerves* lodged, belonging to the Sole.

The different Bones of the Tarsus, having their *rough Surfaces* joined together by *strong Ligaments*, and their parts of articulation *covered with Cartilage*, in such a manner as to form a strong and elastic arch, for supporting the weight of the Body, and lessening the shock it would otherwise undergo in the different motions it has to sustain.

ASTRAGALUS, or *Ankle-bone*, placed under the Bones of the Leg.

The upper part of the Astragalus, formed into a *large Head*, which is smooth on its upper part and sides, to be articulated with the under end of the Leg-bones.

Each of the Cartilaginous Surfaces of the Head of this Bone *depressed* in its middle, to correspond with the parts of the Leg-bones with which they are articulated.

Round the edge of the articulating Surfaces, a *rough Fossa* for the insertion of the Capsular Ligament; and at the sides of this Surface, the Bone marked by the Lateral Ligaments.

The *Joint* between the Astragalus and Leg-bones, forming a *complete Hinge*, which, together with the above-mentioned Ligaments, allows the Foot to bend and extend upon the Leg, but admits of no lateral nor rotatory motion, except in the extended state, when there is a little of each.

The under part of the Bone, consisting of a *deep Fossa*, which

which divides it into an anterior and posterior articulating Surface.

The Fossa in the under Surface, narrower at the inner part of the Bone, and becoming gradually wider as it goes outwards and forwards.

The *posterior articulating Surface*, large and *concave*, for its articulation with the upper and middle part of the Os Calcis.

The *anterior articulating Surface*, *irregular* and *convex*, where it plays upon two smooth Cavities at the inner and fore part of the Os Calcis, and upon a Cartilaginous Ligament extended between the Os Calcis and Os Naviculare.

A *large oblong smooth Head*, at the fore-part of the Bone, for its articulation with the Os Naviculare.

OS CALCIS, or *Heel-bone*, the largest of the Tarsal Bones, situated under the Astragalus, and in the back-part of the Foot.

A *large Knob*, projecting behind, to form the Heel.

A *superficial Cavity* in the upper and back part of this Knob, for the insertion of the *Tendo Achillis*.

A *smooth Convexity* on the upper part of the Bone, for its articulation with the under and back part of the Astragalus.

A *Fossa* at the fore-part of this articulating Surface, running forwards and outwards, and giving origin to strong Ligaments which are inserted in the corresponding Fossa of the Astragalus.

Two Prominences at the inner and fore part of the Bone,
concave,

concave, and smooth above, with a pit between them, for the articulation with the under and fore part of the Astragalus.—

From the posterior Prominence the Cartilaginous Ligament arises, which is fixed to the Os Naviculare.—

A *large Cavity* at the inner side of the Bone, between the posterior of the two last-mentioned Processes and projection of the Heel, for lodging the Tendons of the long Flexors of the Toes, together with the Vessels and Nerves of the Sole.

A *Depression* in the external Surface of the Bone, near its fore-part, where the Tendon of the long Peroneus Muscle runs in its way to the Sole.

The under and back part of the Bone, forming *two Prominences*, where it gives origin to the Aponeurosis and several Muscles of the Sole; and before the Prominences, the Bone *concave*, where it lodges part of these Muscles.

The anterior Surface, *concave*, and somewhat in form of a Pulley placed obliquely, for its articulation with the Os Cuboides.

The *Os Calcis*, articulated with the Astragalus by Ligaments of such strength, that this part of the Foot, upon which the Body rests, is rendered firm and secure, but enjoys very little motion.

OS NAVICULARE, or *Boat-like Bone*, situated at the fore-part of the Astragalus, and inner part of the Foot.

The *posterior Surface*, forming a Cavity somewhat like that of a Boat, for receiving the head of the Astragalus in the manner of Ball and Socket.

A *Prominence* at the inner side of the Bone, for the insertion of Tendons, Muscles, and strong Ligaments, particularly for the Ligament stretched between this Bone and the Os Calcis, for the support of the Astragalus.

The *fore-part* of the Bone, *convex*, and divided into *three articular Surfaces*, for the articulation with the Ossa Cuneiformia.

Between the Os Naviculare and Astragalus, the Foot has its principal lateral and rotatory motions, though each of the other Joints of the Tarsus contributes a little.

OS CUBOIDES, or *Bone of a Cubic form*, placed at the fore and outer part of the Tarsus.

The *posterior Surface* of this Bone, *smooth, convex* at its *inner*, and *concave* at its *outer* part, corresponding with the anterior extremity of the Os Calcis.

The *inner Side*, articulated with the Os Naviculare and external Cuneiform Bone.

Its *under Surface*, *irregular* where it gives attachment to strong Ligaments, and to the Adductor Pollicis Muscle.

A *deep Fossa* in the outer and under part of the Bone, for lodging the Tendon of the Peroneus Longus, where it crosses the Sole.

The *anterior extremity*, divided into a small inner, and large outer plain Surface, to be articulated with the fourth and fifth Metatarsal Bones.

Three OSSA CUNEIFORMIA, or *wedge shaped Bones*, situated at the fore-part of the Tarsus, and inner side of the Cuboid Bone.

The

The *upper part* of these Bones, *flat* where they are covered with Ligaments.

The *under part*, *irregular*, for the attachment of Muscles and strong Ligaments lying in the Sole.

The *posterior Surface*, *flat*, and covered with Cartilage, to be articulated with the Os Naviculare.

The *anterior Surface*, also flat, for the articulation with the Metatarsal Bones.

Os Cuneiforme Externum, or *Medium*, of a middle size between the next two Bones, and opposed to the Metatarsal Bone of the Third Toe.—The outer side of this Bone articulated with the Os Cuboides.

Os Cuneiforme Medium, or *Minimum*, the least of the three, and articulated at its outside with the former Bone, and anteriorly with the second Metatarsal Bone.

Os Cuneiforme Internum, or *Maximum*, the largest of the Cuneiform Bones, and placed obliquely, with its anterior Surface opposed to the Metatarsal Bone of the great Toe.

The sharp Edge of this Bone turned upwards, while that of the other two is in the opposite direction.

The *Navicular*, *Cuboid*, and *Cuneiform Bones*, are almost Cartilaginous at birth.

METATARSUS, or *Bones placed upon the Tarsus*,

Composed of *five Bones*, which answer to the general characters given to the Metacarpal Bones.

Their *bodies*, *long*, *arched upwards*, and *tapering* towards their anterior extremities.

The

The *extremities*, *large* in proportion to their bodies, and the posterior much larger than the anterior.

The *Bases flat*, or a very little *hollowed*, to be articulated with the fore-part of the Tarsal Bones.

From the flatness of their Bases, and the strength of the Ligaments which fix these Bones to those of the Tarsus, very little motion is allowed to this part of the Foot.

Round the Bases, *rough Surfaces* for the attachment of Ligaments.

The *Sides of the Bases*, *flat* where they are articulated with each other.

A *Ridge* above, and a *flat Surface* at each side of their bodies, for the origin of the Interosseous Muscles.

The *flat Surfaces* turned obliquely outwards, and the obliquity increasing the more externally the Bones are placed.

The *anterior Extremities* forming *Balls*, to be articulated with the Toes;—the Balls much longer from above downwards, than from one side to the other.

Round the Heads, *distinct impressions*, where the Capsular Ligaments are fixed.

PECULIARITIES of the METATARSAL BONES.

The *Metatarsal Bone of the Great Toe*, by much the thickest and strongest, but shortest of the Metatarsus.

The *articulating Cavity* of its Base, deeper than the rest.

The *anterior Extremity*, bearing a greater proportion to the *Base* than the rest, having a much larger share of the weight of the Body to sustain here, and formed into a
middle

middle Prominence, with *two lateral Depressions*, where the *Offa Sefamoidea* move.

The *Metatarsal Bone of the second Toe*, the longest of the five.

The *Metatarsal Bone of the middle Toe*, the second in length, with a *Base* like that of the former Bone, triangular, but a little larger, to be articulated with the *Os Cuneiforme Externum*.

The *Metatarsal Bone of the Fourth Toe*, nearly of the same length as the former, but distinguished from it by its *Base* being thicker below, and its *Cartilaginous Surface* being more of a square form, corresponding with the anterior and inner part of the *Os Cuboides*, with which it is articulated.

The *Metatarsal Bone of the Little Toe*, the shortest, with flat *Surfaces* facing upwards and downwards.

The *Base* which rests on the *Os Cuboides*, projecting outwardly into a large *Tuberosity*, which gives origin to *Muscles*, and forms one of the points on which the *Body* rests in standing.

The *Bones of the Toes*, the same in number with those of the *Fingers*, viz. two to the *Great Toe*, and three to each of the smaller *Toes*, and the different *Bones* here, as in the *Fingers*, disposed in *Ranks* or *Phalanges*.

The *two Bones of the Great Toe*, like those of the *Thumb*, but stronger, and placed in the same *Row* with the *Bones* of the *Toes*, for the purpose of walking, and assisting in supporting the *Body*.

The *Bones of the smaller Toes*, every way less than those of the *Fingers*.

Their

Their *under Surface, depressed*, where the Tendons of their Flexor Muscles are lodged.

The *Bases* of the first Phalanx, as in the Fingers, forming Sockets to receive the Balls, or Heads of the Metatarsal Bones.

The *Joints* between the first and second Phalanx, and also between the second and third, as in the Fingers, forming *Hinges*, and the motions similar, but more confined.

Of the small Toes, the *first*, or that next the Great Toe, the *largest*, the rest becoming *smaller* the more externally they are placed.

The second and third Bones, especially of the little Toe, frequently joined by an union of Substance.

OSSA SESAMOIDEA.

The Ossa Sesamoidea are the only Bones of the Skeleton which remain to be described.

THEY are small Bones, compared in shape to the seeds of the Sefamum, or oily grain.

Their size, situation, and number, vary in different persons.

They are sometimes found at the roots of the Fingers and small Toes; at the second Joint of the Thumb, and at that of the Great Toe; between the Condyles of the Os Femoris and Gastrocnemius Muscle; between the Tendons of the Peroneus Longus and Os Cuboides, &c.

Those commonly observed are placed in pairs at the

roots of the Thumb and Great Toe, between the Tendons of their Flexor Muscles and Joints.

They are *convex* on their outer Surface, where they are inclosed by the Tendons and Ligaments fixed to them.

And *concave*, and lined with Cartilage next the Joints, where they play upon the Bones with which they are articulated.

They are considered by Anatomists as serving the same general purpose with the Patella.

PRIN-

PRINCIPAL DIFFERENCES

BETWEEN THE MALE AND FEMALE SKELETON.

THE Female Skeleton observed, in general, to be smaller and slenderer throughout than that of the Male.

A ripe Female Bone, of the same size with a Male Bone, usually distinguished by the Ridges, Depressions, rough Surfaces, and other Inequalities, being less conspicuous in the former.

The Circumference of the Female Skull said by a late Author to be larger.

The Os Frontis found to be more frequently divided by a continuation of the Sagittal Suture.

The Frontal Sinuses observed to be narrower.

All the Bones of the Face more delicate.

The Bodies of the Vertebræ longer.

The Intervertebral Substances deeper or thicker.

The upper part of the Thorax in proportion wider.

The under part narrower, or the whole Thorax less conical.

The Cartilages of the True Ribs longer in proportion to the Osseous part, and broader and flatter to support the Breasts.

The Sternum more raised, and the whole Thorax more distant from the Pelvis.

The length of the Sternum less, and terminating below in a line nearly opposite to the plane of the fourth pair of Ribs, but in the Male Skeleton terminating opposite to that of the fifth pair.

The length of the Loins greater.

All the Diameters of the Pelvis larger.

The Spines and Processes of the *Ossa Innominata* farther distant from each other.

The *Os Sacrum*, broader, and turned more backwards, for enlarging the Cavity of the Pelvis.

The *Os Coccygis*, more slender, turned more backwards, and having a greater degree of motion.

The *Ossa Ili*a, flatter, and more reflected outwards, by which the under part of the Abdomen is rendered more capacious.

The Notches of the *Ossa Ili*a wider, and the conjoined Surfaces of the *Ossa Innominata* and *Os Sacrum* less.

The space between the *Ossa Pubis* larger; of course the Ligamentous Cartilage of the *Symphysis* broader, though shorter.

The Angle formed by the *Crura* of the *Ossa Pubis* with the *Symphysis* larger; that of the Male being acute, while in the Female, the Angle extends to 80 or 90 degrees.

The Tuberosities of the *Ossa Ischia*, flatter, and at a greater distance from each other.

The Brim of the Pelvis, wider, and of an oval form, corresponding with the Head of a Child, and the longest Diameter extending between the *Ossa Ili*a.

In the Male, the Brim of the Pelvis observed to have
more

more of a circular appearance, and to have the greatest extent between the *Ossa Pubis* and *Os Sacrum*.

The opening at the under part of the Pelvis, in the Female, much wider, and of an oval form; but the oval the reverse of that at the Brim.

The Foramina Ovalia wider.

All the Openings at the under part of the Pelvis, being wider, leave a large passage for the Birth of the Child.

The *Acetabula* farther distant from each other, in consequence of which, Women who are very broad at this part of the Body waddle when they walk.

The *Ossa Femorum* more curved: The neck of the Thigh-bone forming a greater Angle with its Body: The internal Condyle larger.

The Feet smaller.

The Clavicles less crooked.

The *Scapulæ* smaller, and their Angles more acute.

The Superior Extremities shorter.

The *Ossa Carpi* narrower, and

The Fingers more tapering towards their extremities.

END OF PART FIRST.



PART II.

OF

THE MUSCLES.

THE MIRROR

OF THE
MUSCLES IN GENERAL.

THE MUSCLES serve for the motions of the different parts of the Body, and derive their general name from their power of contracting.

Of Muscles in general, the following things to be attended to.

The *Cellular Substance*, which surrounds the Muscles, and allows them to move upon each other, and upon the adjacent parts.

The *Cellular Substance*, *condensed* in certain parts of the Body, and giving an appearance of *Membrane*, formerly called *Tunica Propria Musculorum*.

The *Division* of a Muscle into

Origin, or *Head*;—or that Extremity of the Muscle which arises from the most stable or fixed part, and towards which the contraction is made;

Belly, or *thickest part*, which swells when the Muscle is in action;

Insertion, or *Termination*, or that Extremity which is implanted into the part to be moved, and which is commonly smaller than the Origin.

The Division of a Muscle into Flešby and Tendinous Parts.

The *Flešby part* distinguished by being *soft, sensible*, generally of a *red colour*—from the great quantity of Blood in it,—and possessing *contractility*.

The

The Fleſhy part, having numerous *Blood-veſſels*, *Lymphatics*, and *Nerves*.

Diviſion of Muſcles into *Reſtilineal*, as in the *Sartorius*; — *Simple Penniform*, as in the *Peroneus Longus*; — *Complete Penniform*, as in the *Rectus Femoris*; — *Compound Penniform*, as in the *fore-part of the Soleus*; — *Radiated*, as in the *Pectoralis Major*; — *Hollow*, as in the *Heart*, *Inteſtines*, *Bladder of Urine*, &c.

The *particular Names* of Muſcles, taken from their *ſhape*, *ſize*, *ſituation*, *direction*, *composition*, *uſe*, and *attachment*.

Tendon, diſtinguiſhed from the Fleſhy part, by being generally *ſmaller*, *firmer*, *ſtronger*; — of a *white glistening colour*, having no *contractility*, and little or no *ſenſibility* in the ſound ſtate.

Tendons having very few *Blood-veſſels*, and no evident *Nerves*.

Uſe of Tendons: To connect Muſcles to Bones, and by the ſmallneſs of their ſize, compared to the Belly of the Muſcle, to preſerve the elegance and ſymmetry of the Joints, &c.

The *Appendages* of Muſcles, viz.

Aponeuroſes, or *Fasciæ*, (the former name derived from their having been miſtaken for Nerves), which are the Tendons expanded upon a wide Surface, ſerving to give inſertion to Muſcular Fibres, to keep them in their proper ſituation, and to brace them in their action.

Annular Ligaments, to keep Tendons from ſtarting.

Trochleæ, or *Pulleys*, to alter the direction of Tendons.

Burſæ Mucoſæ, placed where Tendons play over hard Subſtances; ſerving to contain Synovia, and prevent A-bration.

MUSCLES OF THE INTEGUMENTS OF THE CRANIUM, AND OF THE EYE-LIDS.

OCCIPITO-FRONTALIS,

Or *Occipitalis and Frontalis*, or *Epicranius*, &c.

Origin: Fleahy from near the middle of the upper arched Ridge of the Occipital Bone, and Tendinous from the extremity of that Ridge, where it joins the Temporal Bone.—It arises after the same manner on the other side. From the Fleahy origins, and also from between them, a Tendinous expansion is extended along the upper part of the Cranium, adhering firmly to the skin, and but loosely to the Pericranium.—At the upper part of the Forehead it becomes Fleahy, and, descending with straight Fibres, has its

Insertion in the Skin and parts under it belonging to the Eye-brows.

From the under and middle part of the Muscle, a *Slip* is continued down upon the root of the Nose, to be connected with the Compressor Naris, and Levator Labii Superioris et Alæ Nasi.

Action of the Muscle: To move all that part of the Skin which covers it, and particularly the Skin of the Brow and Eye-brows.

The Slip upon the Nose may either assist the Nasal Muscles connected with it, or antagonise the Occipito-frontalis.

CORRUGATOR

CORRUGATOR SUPERCILII.

Origin : From the internal angular Process of the Os Frontis, above the joining of that Bone with the Os Nasi.

From thence it runs upwards and outwards, in the direction of the Superciliary Ridge, and behind the inferior part of the Frontal Muscle.

Insertion : Into the inner part of the Occipito-frontalis and Orbicularis Palpebrarum, where these two Muscles join each other.

Action : To assist its fellow in drawing the Eye-brows downwards and inwards, and corrugating or wrinkling the Skin between them into longitudinal folds.

ORBICULARIS OCULI, or *Palpebrarum*.

Origin : From the Orbital Process of the superior Maxillary Bone ; from the internal Angular Process of the Frontal Bone ; and, by a small round Tendon, from the Nasal Process of the superior Maxillary Bone.

From these Origins the Muscle passes outwards, under the Skin of the Eye-lids, surrounding the Orbit in a circular manner ; extending somewhat beyond it, and covering the upper part of the Cheek.

The outer Surface of the Muscle adheres to the Skin of the Eye-lids ; its upper and inner Edge is intimately connected with the Frontal and Corrugator Muscles.

Action : To close the Eye by bringing the Eye-lids together, to press the Ball of the Eye inwards, and act upon the Lacrymal Organs, so as to assist them in the production and direction of the Tears.

Musculus

Musculus Ciliaris of some Authors,—named from its situation near the Cilia, or Eye-lashes,—is that part of the Orbicularis Oculi which covers the Cartilages of the Eye lids, and is remarkably thin.

A *Fleshy Slip* frequently passes down from the under and outer part of the Orbicularis, to join the Levator Labii Superioris et Alæ Nasi. When present, it may draw the parts to which it is attached a little towards each other.

LEVATOR PALPEBRÆ SUPERIORIS.

Origin: From the margin of the Foramen Opticum of the Sphenoid Bone.

It runs forwards within the Orbit, over the Levator Oculi, where it becomes gradually broader, its anterior extremity passing under the Orbicularis Palpebrarum.

Insertion: By a broad thin Tendon, into nearly the whole length of the Cartilage of the upper Eye-lid.

Action: To open the Eye by raising the upper Eye-lid.

MUSCLES COMMON TO THE HEAD AND EXTERNAL EAR.

ATTOLLENS AUREM, or *Superior Auris*.

Origin: By a broad Tendinous expansion, from the Tendon of the Occipito-frontalis. It goes down over the Aponeurosis of the Temporal Muscle.

In

In its passage, it forms a thin Fleſhy Slip, which becomes gradually narrower, and has its

Infertion in the upper part of the root of the Cartilage of the Ear.

Action : To give tenſion to the part into which it is inferted, and, in ſome perſons, to raiſe the Ear.

ANTERIOR AURIS.

Origin : Thin and Membranous, near the poſterior part of the Zygoma.

The middle part is mixed with Fleſhy Fibres.

Infertion : By a narrow Tendon into the back-part of the beginning of the Helix.

Action : To ſtretch that part of the Ear to which it is fixed.

RETRAHENTES AURIS, or *Poſterior Auris*.

Origin : By two, and ſometimes by three diſtinct Muſcles, from the upper and outer part of the Maſtoid Proceſs : Paſſing forwards, they have their

Infertion, by ſmall Tendons in the back-part of the Concha.

Action : To ſtretch the Concha, and, in ſome perſons, to draw the Ear back.

MUSCLES OF THE NOSE AND MOUTH.

COMPRESSOR NARIS.

Origin : By a narrow beginning from the Ala Nafi, where

where it is connected with the Levator Labii Superioris et Alæ Nasi. It spreads into a number of thin scattered Fibres, which cross the Wing, and run towards the Dorsum of the Nose, where it joins its fellow.

Insertion: Into the anterior extremity of the Nasal Bones, and to the Slip which descends from the Frontal Muscle.

Action: To press the Ala towards the Septum, as in smelling; or if the Fibres of the Frontal Muscle which are connected to it act, they pull the Ala outwards. It also corrugates the Skin of the Nose, and assists in expressing certain Passions.

LEVATOR LABII SUPERIORIS ET ALÆ NASI.

Origin: By two thin Flethy Slips; the first from the external part of the Orbital Process, and the second from the upper part of the Nasal Process of the Superior Maxillary Bone.

Insertion of the first part of the Muscle into the Upper Lip, and of the second into the Upper Lip and Wing of the Nose.

Action: To raise the Upper Lip, in opening the Mouth, and to dilate the Nostril.

DEPRESSOR LABII SUPERIORIS ET ALÆ NASI.

Origin: Thin and Flethy, from the Alveoli of the Dentes Incisivi and Caninus of the Upper Jaw; and running upwards, at the side of the Furrow of the Lip, it has its

Insertion in the Upper Lip, and root of the Ala Nasi.

Action:

Action : To draw the Upper Lip and Ala Nâsi downwards.

LEVATOR ANGULI ORIS,

Or *Levator Labiorum Communis*, or *Caninus*.

Origin : Thin and Flefhy, from the fuperior Maxillary Bone, immediately under the Foramen Infra-orbitarium ; and, running down deeper and farther out than the Levator Labii Superioris, it has its

Infertion into the Angle of the Mouth, where it joins with its Antagonift.

Action : To raife the corner of the Mouth,—as in expreffing the chearful Paflions.

DEPRESSOR LABII INFERIORIS, or *Quadratus Genæ*.

Origin : Broad and Flefhy, from the under part of the Lower Jaw, at the fide of the Chin ;—from thence it runs obliquely upwards and inwards, till it become contiguous to its fellow in the middle of the Lip.

Infertion : Into one half of the Edge of the Under Lip.

Action : To affift in opening the Mouth, by depressing the Under Lip, and pulling it a little outwards.

LEVATOR LABII INFERIORIS, or *Levator Mentis*.

Origin : From the roots of the Alveoli of the Dentes Incifores and Dens Caninus of the Lower Jaw.

Infertion : Into the Under Lip, and Skin of the Chin.

Action : To raife the parts into which it is inferted.

DEPRESSOR

DEPRESSOR ANGULI ORIS, or *Musculus Triangularis*.

Origin: Broad and Flefhy, from the under edge of the Lower Jaw, at the fide of the Chin.—It runs over the Origin of the Depreffor Labii Inferioris; and, becoming gradually narrower, has its

Infertion into the angle of the Mouth, where it intermixes with the Levator Anguli Oris.

Action: To deprefs the corner of the Mouth;—as in expreffing the angry Paffions.

ZYGOMATICUS MAJOR.

Origin: Flefhy, from the Os Malæ, near the Zygomatic Suture. Defcending obliquely forwards, it has its

Infertion into the angle of the Mouth, its Fibres intermixing with thofe of the Depreffor Anguli Oris, and Orbicularis Oris.

Action: To raife the angle of the Mouth, in the direction of its Fibres, and make the Cheek prominent; as in Laughing.

ZYGOMATICUS MINOR.

Origin: Higher on the Os Malæ than the former Mufcle. It is fituated before it, and takes the fame courfe, but is much more flender.

Infertion: Into the Upper Lip, along with the Levator Anguli Oris.

Action: To raife the corner of the Mouth, and draw it obliquely outwards.

This Mufcle is often awanting.

By the frequent action of the Muscles which raise the corner of the Mouth and Upper Lip, that Furrow is formed which extends between the outer corner of the Nose and Mouth, and which is so conspicuous in the Face of a person advanced in life.

BUCCINATOR,

Or, *Trumpeter*, or *Retractor Anguli Oris*.

Origin: From a Ridge of the Lower Jaw, extending between the last Molaris and Coronoid Process of the Lower Jaw;—also from the Upper Jaw, between the last Dens Molaris and Pterygoid Process of the Sphenoid Bone. From thence going forwards with straight Fibres, and adhering closely to the Membrane which lines the Mouth, it has its

insertion into the Corner of the Mouth, along with the Orbicularis Oris.

Action: To draw the angle of the Mouth backwards and outwards, and to contract its Cavity by pressing the Cheek inwards, by which the Food is thrust between the Teeth in the time of manducation.—It is likewise active in blowing Wind-instruments,—as a Trumpet,—from which it has obtained its name.

ORBICULARIS ORIS, or *Sphincter Labiorum*.

This is a complete Sphincter surrounding the Mouth, and composing the principal part of the Lips, and is in a great measure formed by the Muscles which terminate in it.—At the corners of the Mouth, the Fibres decussate each other, so as to make it resemble two semicircular Muscles,
from

from which it has been named by some Authors, *Semi-Orbicularis Superior*, and *Semi-Orbicularis Inferior*.

Action : To shut the Mouth, and to counteract the different Muscles inserted into it.

The *Nasalis Labii Superioris* of ALBINUS may be considered as part of the former Muscle, running up to be connected to the Septum Nasi, and serving as a Levator of the Upper Lip, or a Depressor of the under part of the Nose.

MUSCLES OF THE LOWER JAW.

APONEUROSIS TEMPORALIS.

Previous to the description of the Temporal Muscle, it is necessary to take notice of the *Temporal Aponeurosis*, which is a strong Tendinous Membrane, arising from the Bones which give origin to the upper semicircular part of the Muscle, and, descending over it, is fixed to the Zygoma.—It gives rise to part of the Temporal Muscle, and braces it in its action.

TEMPORALIS.

Origin : In a semicircular manner, Fleehy, from the lower half of the Parietal and Temporal Fossa of the Frontal Bones ; and from the Squamous part of the Temporal, and Temporal Plate of the Sphenoid Bones.—It arises likewise from the Aponeurosis which covers it : From these different Origins the Fibres descend like Radii, and the Muscle

changes into a strong Tendon, which passes under the Jugum, to have its

Insertion into the whole of the Coronoid Process of the Lower Jaw, which it incloses as in a sheath.

Action : To pull the Lower Jaw upwards and backwards against the Upper Jaw,—whereby it becomes useful in biting, chewing, &c.

MASSETER.

Origin : By strong Tendinous and Fleishy Fibres from the superior Maxillary Bone, where it joins the Os Malæ, and from the whole length of the under and inner edge of the Zygoma,—the outer part of the Muscle slanting backwards, the inner part forwards, and in some measure decussating the other. In its descent, it covers and conceals the Coronoid Process and under end of the Temporal Muscle, and has its

Insertion into the angle of the Lower Jaw, and from that upwards, to the outside of the Coronoid Process.

Action : To raise the Lower Jaw.

PTERYGOIDEUS INTERNUS, or *Major*.

Origin : From the Fossa Pterygoidea of the Sphenoid and Palate Bones : It passes downwards and outwards, and has its

Insertion into the ^{inner side of the angle} Cervix and Capsular Ligament of the Lower Jaw, and is continued as far as the Groove for the inferior Maxillary Nerve.

Action : To raise the Jaw, and draw it obliquely towards the opposite side.

PTERY-

PTERYGOIDEUS EXTERNUS, or *Minor*.

Origin : From the outer side of the Pterygoid Process of the Sphenoid Bone ; from the Tuberosity of the superior Maxillary Bone ; and from the root of the Temporal Process of the Sphenoid Bone. From these Origins it passes, almost horizontally, outwards and a little backwards.

Insertion : Into the Cervix and Capsular Ligament of the Lower Jaw.

Action : To pull the Lower Jaw to the opposite side, and, if both Muscles act, to bring it forwards, so as to make the Fore-Teeth project beyond those of the Upper Jaw. The Muscle, in its different motions, acts also upon the Interarticular Cartilage.

 MUSCLES ON THE FORE AND LATERAL PART
OF THE NECK.
PLATYSMA MYOIDES, or *Musculus Cutaneus*.

Origin : By a number of separate Flethy Slips, from the Cellular Substance, which covers the upper parts of the Pectoral and Deltoid Muscles.—In their ascent, they unite to form a thin Muscular Expansion, similar to the Cutaneous Muscle of Quadrupeds, which runs obliquely upwards along the side of the Neck, adhering to the Skin.

Infertion : Into the side of the Lower Jaw and the Depressor Anguli Oris, and into the Skin which covers the under part of the Masseter Muscle and Parotid Gland.

Action : To assist in depressing the Skin of the Cheek, the corner of the Mouth, and the Lower Jaw ; and, when the Jaws are shut, to raise all that part of the Skin connected with it under the Lower Jaw.

STERNO-CLEIDO-MASTOIDEUS, or *Sterno-Mastoideus*.

Origin ; From the top of the Sternum, and from the anterior end of the Clavicle, by two distinct Heads. A little above the Clavicle, these unite to form a strong Muscle, which runs obliquely upwards and outwards ; the greater part of it being covered by the Cutaneous Muscle.

Infertion : By a thick strong Tendon, into the Mastoid Process, which it surrounds ; and becoming thinner, the Infertion extends as far as the Lambdoid Suture.

Action : To turn the Head to one side, and assist in rolling it. When both Muscles act, they bow the Head.

MUSCLES SITUATED BETWEEN THE OS HYOIDES AND TRUNK.

STERNO-HYOIDEUS.

Origin : From the upper and inner part of the Sternum, and from the adjacent parts of the Clavicle and Cartilage

tilage of the first Rib. It ascends upon the fore-part of the Trachea and following Muscle, to have its

Insertion into the Base of the Os Hyoides.

Action : To depress the Os Hyoides.

STERNO-THYROIDEUS.

Origin : From the upper and inner part of the Sternum, and partly from the Cartilage of the first Rib.—It runs along the fore-part and side of the Trachea and Thyroid Gland, and has its

Insertion into the under and lateral part of the Thyroid Cartilage.

Action : To draw the Larynx downwards.

THYRO-HYOIDEUS, or *Hyo-Thyroideus*.

Origin : Where the former Muscle terminates, having the appearance of being continued from it.

Insertion : Into part of the Base, and almost all the Cornu of the Os Hyoides.

Action : To depress the Os Hyoides, or to raise the Thyroid Cartilage.

CRICO-THYROIDEUS.

Origin : From the side and fore-part of the Cricoid Cartilage. It runs obliquely upwards, and has its

Insertion by two portions ; the one into the under part of the Thyroid Cartilage, the other into its inferior Cornu.

Action : To depress and pull forwards the Thyroid Cartilage, or to raise and draw backwards the Cricoid Cartilage.

OMO-HYOIDEUS.

Origin : From the superior Costa of the Scapula, near the Semilunar Notch. It goes obliquely upwards and forwards, and is of a very slender form. Under the Sternomastoideus, it becomes Tendinous, and, again growing Flefhy, has its

Infertion into the Base of the Os Hyoides, at the side of the Sterno-Hyoideus.

Action : To depress the Os Hyoides, and pull it to one side ; or when both act, to draw it directly down.

MUSCLES SITUATED BETWEEN THE LOWER JAW
AND OS HYOIDES.

DIGASTRICUS, or *Biventer Maxilla Inferioris*.

Origin : By its posterior Belly, from the Groove at the root of the Mastoid Process of the Temporal Bone. It runs downwards and forwards, and forms a strong round Tendon, which passes through the Stylo-Hyoideus Muscle ; it is then fixed by a Ligament to the Os Hyoides, and, having received an addition of Tendinous and Muscular Fibres, runs obliquely upwards and forwards, forming another Flefhy Belly, which has its

Infertion into a rough Sinuosity at the under part of the Symphysis of the Lower Jaw.

Action : To open the Mouth by pulling the Lower Jaw downwards

downwards and backwards; and, when the Jaws are shut, to raise the Os Hyoides, and of consequence the Throat,—as in Swallowing.

MYLO-HYOIDEUS.

Origin: Flefhy, broad, and thin, from the inside of the Lower Jaw, between the laft Dens Molaris and the middle of the Chin, where it joins its fellow. It runs down behind the Digafticus, and has its

Infertion into the Body of the Os Hyoides, joined to its fellow by the intervention of a white Tendinous Line.

Action: To pull the Os Hyoides forwards, upwards, and to a fide.

GENIO-HYOIDEUS.

Origin: From a Tubercle on the under and inner part of the Symphyfis of the Lower Jaw, by a flender beginning, which by degrees becomes broader, and, running down, has its

Infertion into the Body of the Os Hyoides, under the former Mufcle.

Action: To draw the Os Hyoides towards the Chin, when the Jaws are shut; or the Chin towards the Os Hyoides, when the latter is fixed by the Mufcles which come from the Sternum.

GENIO-HYO-GLOSSUS.

Origin: From the fame Tubercle with the former Mufcle. Its Fibres fpread out like a Fan, and have their

Infertion

Insertion into the whole length of the Tongue, and Base of the Os Hyoides.

Action: According to the direction of its Fibres,—to draw the Tongue forwards or backwards, to pull it downwards, and render its Dorsum concave, and to make the Os Hyoides advance towards the Chin.

HYO-GLOSSUS.

Origin: From the whole length of one half of the Os Hyoides. It runs upwards, and has its

Insertion into the side of the Tongue, near the Stylo-Glossus.

Action: To depress the edge of the Tongue, and thereby render its upper Surface convex.

LINGUALIS.

Origin: From the root of the Tongue, laterally. It advances between the Genio-Hyo-Glossus and Hyo-Glossus, and has its

Insertion into the tip of the Tongue.

Action: To raise the point of the Tongue; to contract its substance, and bring it backwards.

STYLO-GLOSSUS.

Origin: From the Styloid Process of the Temporal Bone, and from a Ligament which connects that Process to the angle of the Lower Jaw. It goes downwards and forwards,—of a slender form,—to have its

Insertion into the root of the Tongue, near the Hyoglossus; and running along its side, is insensibly lost near the Apex.

Action:

Action : To draw the Tongue backwards, and to one side.

STYLO-HYOIDEUS.

Origin : From the under half of the Styloid Process. It goes downwards and forwards, and, after splitting for the Passage of the Digastric Muscle, has its

Insertion into the Os Hyoides, at the junction of the Base and Cornu.

Action : To pull the Os Hyoides to one side, and a little upwards.

STYLO-HYOIDEUS ALTER.

When present, it is a more slender Muscle than the former ; but, like it, has the same Origin, Insertion, and Action.

STYLO-PHARYNGEUS.

Origin : From the root of the Styloid Process. It goes downwards and forwards, to have its

Insertion into the side of the Pharynx, along which it expands.—It is also fixed to the back-part of the Thyroid Cartilage.

Action : To dilate and raise the Pharynx, and thereby prepare it to receive the Morfel from the Mouth.—It at the same time elevates the Thyroid Cartilage.

CIRCUMFLEXUS, or *Tensor PALATI.*

Origin : From the Spinous Process of the Sphenoid Bone, and from the osseous part of the Eustachian Tube.

It

It runs along the Pterygoideus Internus, passes over the Hook of the Internal Plate of the Pterygoid Process, and plays on it by a round Tendon, as on a Pulley, and, spreading out into a broad Membrane, has its

Insertion into the Velum Palati, and femilunar edge of the Os Palati, extending as far as the Suture which joins the two Bones. Generally some of its posterior Fibres join the Constrictor Pharyngis Superior, and Palato-Pharyngeus.

Action : To stretch the Velum, and to draw it downwards, and to a side towards the Hook.

LEVATOR PALATI, or *Levator Palati Mollis*.

Origin : From the point of the Pars Petrosea of the Temporal Bone, and also from the Eustachian Tube.—From these parts it descends, and has its

Insertion, by a broad Expansion, into the Velum Palati, extending as far as the root of the Uvula, and uniting with its fellow.

Action : To raise the Velum in the time of Swallowing, and press it against the Nose, so as to prevent the food or drink from passing there.

CONSTRUCTOR ISTHMI FAUCIUM.

Origin : From the side of the root of the Tongue. It runs in the doubling of the Skin, which forms the anterior Arch of the Palate.

Insertion : Into the middle of the Velum Palati, at the root of the Uvula, where it is connected with its fellow.

Action : It draws the Palate and Root of the Tongue towards

towards each other, and thereby shuts the Opening into the Fauces.

PALATO-PHARYNGEUS.

Origin : From the middle of the Velum Palati, at the root of the Uvula; and from the insertion of the Constrictor Isthmi Faucium and Circumflexus Palati. The Fibres proceed within the posterior Arch of the Palate, and run to the upper and lateral part of the Pharynx, where they spread, and mix with those of the Stylo-pharyngeus.

Insertion : Into the Edge of the upper and back part of the Thyroid Cartilage; some of its Fibres being lost between the Membrane and inferior Constrictors of the Pharynx.

Action : It draws the Velum and Uvula downwards; the Larynx and Pharynx being at the same time raised. Along with the Constrictor Superior and Tongue, it assists in shutting the passage into the Nostrils, and, in Swallowing, it conveys the food from the Fauces into the Pharynx.

The SALPINGO-PHARYNGEUS of ALBINUS is composed of a small portion of the former Muscle, which arises from the Eustachian Tube, and which, when acting, may affect it.

AZYGOS UVULÆ.

Origin : From the posterior extremity of the longitudinal Palate Suture. It runs in the middle of the Velum Palati,

Palati, and goes through the whole length of the Uvula, adhering in its passage to the Circumflexi Muscles.

Insertion : Into the point of the Uvula.

Action : To shorten the Uvula.

MUSCLES SITUATED UPON THE BACK-PART OF THE PHARYNX.

CONSTRUCTOR PHARYNGIS INFERIOR.

Origin : From the sides of the Thyroid and Cricoid Cartilages. The superior Fibres, running obliquely upwards, cover the under part of the following Muscle, and terminate in a point ; the inferior Fibres run more transversely, and cover the beginning of the Œsophagus.

Insertion : Into its fellow, by the medium of a longitudinal Tendinous line in the middle of the back-part of the Pharynx.

Action : To compress the lower part of the Pharynx.

CONSTRUCTOR PHARYNGIS MEDIUS.

Origin : From the Appendix and Cornu of the Os Hyoides, and also from the Ligament which connects the Cornu to the Thyroid Cartilage. The Muscle, in its passage, spreads out, and terminates in a point above and below ; the upper part covering the following Muscle.

Insertion : Into the Cuneiform Process of the Occipital Bone, before the Foramen Magnum, and to its fellow on
the

the opposite side by a Tendinous Line, similar to the former Muscle.

Action : To compress the middle and upper part of the Pharynx.

CONSTRUCTOR PHARYNGIS SUPERIOR.

Origin : From the Cuneiform Process of the Occipital Bone, before the Foramen Magnum ; from the Pterygoid Process of the Sphenoid Bone, and from both Jaws, near the last Dentes Molares : It is likewise connected with the Buccinator Muscle, and with the root of the Tongue and Palate.—From these Origins, it runs almost horizontally, and has its

Insertion into its fellow, by the intervention of a Tendinous line, as in the case of the former Muscle.

Action : To compress the upper part of the Pharynx, and, with the assistance of the other Constrictors, to thrust the Food down to the Œsophagus.

MUSCLES OF THE GLOTTIS.

CRICO-ARYTENOIDEUS POSTICUS.

Origin : Broad and Flethy, from the back-part of the Cricoid Cartilage.

Insertion : By a narrow extremity into the back-part of the Base of the Arytenoid Cartilage.

Action : To pull back the Arytenoid Cartilage, by which
the

the Ligament of the Glottis is made tense, and the Glottis itself longer.

CRICO-ARYTENOIDEUS LATERALIS.

Origin : From the side of the Cricoid Cartilage, where it is covered by the Thyroid.

Insertion : Into the side of the Base of the Arytenoid Cartilage.

Action : To open the Glottis, by separating the Arytenoid Cartilages, and, with them, the Ligaments of the Glottis.

THYRO-ARYTENOIDEUS.

Origin : From the under and back part of the middle of the Thyroid Cartilage, from which it runs backwards and a little upwards, in a double order of Fibres, upon the side of the Glottis and Ventricle of the Larynx.

Insertion : Into the fore-part of the Arytenoid Cartilage.

Action : It pulls the Arytenoid Cartilage outwards and forwards, and so widens the Glottis, and relaxes its Ligaments.—It may also affect the Ventricle of the Larynx.

ARYTENOIDEUS OBLIQUUS, or *Minor*.

Origin : From the root of one of the Arytenoid Cartilages. Crossing its fellow obliquely, it has its

Insertion near the point of the other Arytenoid Cartilage.

Action : To draw the Arytenoid Cartilages towards each other, and assist in closing the Aperture of the Glottis.

N. B.

N. B. Frequently one of the Oblique Arytenoid Muscles is wanting.

ARYTENOIDEUS TRANSVERSUS, or *Major*.

Origin : From almost the whole length of the back-part of one of the Arytenoid Cartilages. It goes across, to have its

Insertion, in a similar manner, in the other Arytenoid Cartilage.

Action : To close the Glottis, by drawing the two Arytenoid Cartilages and the Ligaments of the Glottis together.

THYRO-EPIGLOTTIDEUS.

Origin : By a few scattered Fibres, from the Thyroid Cartilage.

Insertion : Into the side of the Epiglottis.

Action : To assist its fellow in drawing the Epiglottis towards the Glottis.

ARYTENO-EPIGLOTTIDEUS.

Origin : By a number of small Fibres, from the Arytenoid Cartilage. It runs along the outer side of the external Opening of the Glottis.

Insertion : Into the Epiglottis, along with the former Muscle.

Action : To assist its fellow in drawing the Epiglottis immediately down upon the Glottis.

It is counteracted by the elasticity of the Epiglottis.

The two last-mentioned Muscles are obscurely seen, excepting in robust Bodies.

MUSCLES SITUATED ON THE ANTERIOR AND LATERAL PARTS OF THE ABDOMEN.

OBLIQUUS DESCENDENS EXTERNUS,

Or *Obliquus Externus Abdominis.*

Origin : In a serrated manner, from the lower edge of the eight inferior Ribs, near their Cartilages. The Serræ intermix with the Indentations of the Serratus Major Anticus, and it is commonly connected with the Pectoralis Major, Intercostales, and Latissimus Dorsi, the last of which covers the edge of a portion of it, extending from the twelfth Rib to the Spine of the Os Ilium.—From these Origins the Fibres of the Muscle run obliquely downwards and forwards, and terminate in an Aponeurosis, which, near its margin, is firmly connected with the Aponeurosis of the following Muscle, where it forms a curved line, called *Linea Semilunaris*. From this the Tendinous Fibres are continued in the same direction with the Flethy Fibres, to the middle of the Abdomen.

Insertion : Into its fellow of the opposite side, by the medium of the *Linea Alba*, which extends from the Cartilago Eniformis to the Pubes. This white Line is formed by the meeting of the Tendons of the Oblique and Transverse Muscles of the Abdomen, and is perforated in the middle by the Umbilicus—originally a passage for the Umbilical Cord, and now formed into a Cicatrix.

The

The under part of the Tendon divides into two Columns, which leave an Oval space between them, called *Ring* of the External Oblique Muscle, for the transmission of the Spermatic Cord in the Male, in whom it is larger than in the Female, where it gives passage to the Round Ligament of the Uterus.

The Muscle is also inserted into the anterior half of the Spine of the Os Ilium, from the superior anterior Spinous Process of which it is stretched, Tendinous, to the Crest of the Os Pubis. This part of the Tendon, which passes over the Flexor Muscles and the great Blood-vessels of the Thigh, is termed *POUPART'S* or *FALLOPIUS'S Ligament*, or *The Inguinal Ligament*.

From the under part of this Tendon, a thin Expansion is sent downwards, and is lost in the Aponeurosis of the Thigh.

Action: To support and compress the Abdominal Viscera, assist the Evacuations, draw down the Ribs, and bend the Trunk forwards, or obliquely to one side.

OBLIQUUS ASCENDENS INTERNUS,

Or *Obliquus Internus Abdominis*.

Origin: From the back-part of the Os Sacrum;—from the Spinous Processes of the three lowest Lumbar Vertebrae, by a Tendon common to it and the Serratus Posticus Inferior;—from the whole length of the Spine of the Os Ilium;—and from the inside of Poupart's Ligament, at the middle of which it sends off the Cremaster Muscle.—From these Origins the Fibres are disposed in a radiated manner; but the greater part of them run in a slanting

direction upwards. At the Linea Semilunaris, the Muscle becomes Tendinous, and adheres firmly to the Tendon of the Obliquus Externus. Here its Tendon divides into two Layers: The anterior Layer, with the greater part of the inferior portion of the posterior Layer, joins the Tendon of the External Oblique, and goes over the Rectus Muscle, to be inserted into the whole length of the Linea Alba: The posterior Layer joins the Tendon of the Transversalis, and goes behind the Rectus; and this union is continued down, till it reaches about half-way between the Umbilicus and Os Pubis. Lower than this, only a few scattered Fibres of the posterior Layer are to be found behind the Rectus; the principal part of it passing before that Muscle, to be inserted into the Linea Alba.

Insertion of the Muscle in general: Into the Cartilages of all the False Ribs, into the Cartilago Ensiformis, and whole length of the Linea Alba.

Action: To assist the former Muscle. It bends the Body, however, in the same direction with the Obliquus Externus of the opposite side.

TRANSVERSALIS, or *Transversus Abdominis*.

Origin: Flethy, from the inner Surface of the Cartilages of the six or seven lower Ribs, where it intermixes with the Digitations of the Diaphragm, and with the Intercostal Muscles; from the Transverse Processes of the twelfth Dorsal and four superior Lumbar Vertebrae;-- from the whole inner edge of the Spine of the Os Ilium; and anterior to this, it is connected to the under Edge of the External Oblique Muscle. At the Linea Alba, the ^{semilunaris} Muscle

Muscle becomes Tendinous, and the Tendon is continued across, adhering to the Internal Oblique Muscle, in the manner already mentioned.—In the whole of its course, it is closely connected to the Surface of the Peritoneum.

Insertion : Into the Cartilago Eniformis, and Linea Alba.

Action : To support, and immediately compress the Abdominal Bowels.

RECTUS ABDOMINIS.

Origin : Tendinous from the fore and upper part of the Symphysis of the Ossa Pubis. It soon becomes Fleishy, and runs upwards in form of a flat Band, the whole length of, and parallel to, the Linea Alba.

In its course, it is divided by three Tendinous Intersections, at and above the Umbilicus ; and there is generally a half-intersection below it.

These seldom penetrate through the whole thickness of its Substance. They adhere firmly to the anterior part of the Sheath which incloses the Muscle, but slightly to the posterior Layer.

Insertion : Into the Cartilages of the three inferior True Ribs and extremity of the Sternum. It frequently intermixes with the under edge of the large Pectoral Muscle.

Action : To compress the fore-part of the Abdomen ; to draw down the Ribs in Expiration, and to bend the Body forwards, or to raise the Pelvis. By means of its Sheath and Tendinous Intersections, it is kept in its place, and allowed to act more equally.

PYRAMIDALIS.

Origin : By a broad Base, from the upper part of the Symphysis of the Offa Pubis.—It runs upwards within the same Sheath with the Rectus, and, tapering to a point in its ascent, it has its

Insertion, between the Pubis and Umbilicus, in the Linea Alba and inner edge of the Rectus Muscle.

Action : To assist the under part of the Rectus in drawing down the Ribs, or in compressing the under part of the Abdomen.

It is frequently wanting in both sides, and then the under end of the Rectus is larger, as if to supply its place.

MUSCLES OF THE MALE PARTS OF GENERATION AND ANUS.

CREMASTER.

Origin : From the under edge of the Internal Oblique Muscle of the Abdomen. Passing through the Ring of the External Oblique, it surrounds the Spermatic Cord as far as the Testicle, where the Fibres separate and expand, and have their

Insertion into the Tunica Vaginalis Testis, and Cellular Substance of the Scrotum.

Action : To suspend and elevate, and to compress and evacuate the Testicle.

ERECTOR

ERECTOR PENIS, or *Ischio-Cavernosus*.

Origin : Tendinous, from the inner side of the Tuberosity of the Os Ischium.—It runs upwards, Fleishy, increasing in breadth, and embracing the whole Crus of the Penis.

Insertion : By a thin Tendon, into the Elastic Membrane which covers the Corpora Cavernosa Penis, as far up as the union of the Crura.

Action : To compress the Crus Penis, and push the Blood from it into the fore-part of the Corpora Cavernosa, in the time of its Distension. It is likewise supposed by some Anatomists, to give a proper direction to the Penis.

ACCELERATOR URINÆ, or *Ejaculator Seminis*.

Origin : Fleishy, from the Sphincter Ani, and Membranous part of the Urethra; and Tendinous, from the Crus and beginning of the Corpus Cavernosum Penis.—In its course, it forms a thin Fleishy Layer, the inferior Fibres of which run more transversely than the superior, which descend in an oblique direction; the Muscles on the opposite sides completely inclosing the Bulb of the Urethra.

Insertion : Into its fellow, by a Tendinous Line running longitudinally on the middle of the Bulb.

Action : To propel the Urine or Semen forwards; and, by compressing the Bulb, to push the Blood into, and thereby distend the Corpus Cavernosum Urethræ, and Glans of the Penis.

TRANSVERSUS PERINEI, or *Transversalis Urethrae*.

Origin : From the inside of the Tuberosity of the Os Ischium, close to the Erector Penis. Running across, it has its

Insertion into the back-part of the Accelerator Urinæ, and adjoining part of the Sphincter Ani.

Action : To dilate the Bulb for the reception of the Semen or Urine ; or, it may also assist the Levator Ani in retracting the Anus, after the discharge of the Fæces.

There is frequently another Muscle, termed *Transversalis Perinei Alter*, running along with the former, and having the same Origin, Insertion, and Action, but going more obliquely upwards.

SPHINCTER ANI.

Origin : From the extremity of the Os Coccygis. It runs forwards within the skin and fat which cover the verge of the Anus, and in its passage, forms a broad, flat, oval Muscle, which surrounds the extremity of the Intestinum Rectum.

Insertion : By a narrow point, into the Acceleratores Urinæ and Transversi Perinei.

Action : To shut the Anus, and also to pull down the Bulb of the Urethra, by which it may assist in ejecting the Urine and Semen.

The *Sphincter Internus* of some Authors, is merely the Circular Muscular Coat of the end of the Rectum.

LEVATOR

LEVATOR ANI.

Origin : By a femicircular edge, from the Os Pubis, within the Pelvis, at the upper edge of the Foramen Thyroideum; from the Aponeurosis which covers the Obturator Internus and Coccygeus Muscles; and from the Spinous Process of the Os Ischium.—Its Fibres descend like rays from a circumference, to meet those of its fellow, and with it to form a kind of inverted Funnel.

Insertion : Into the Sphincter Ani, Accelerator Urinæ, and under and fore part of the Os Coccygis.—It surrounds the extremity of the Rectum, neck of the Bladder, Prostate Gland, and part of the Vesiculæ Seminales.

Action : To support the Contents of the Pelvis; to retract the end of the Rectum, after the evacuation of the Fæces; and to assist in the evacuation of the Rectum, Bladder, Vesiculæ Seminales, and Prostate Gland.—It is likewise considered by some as a principal agent in the distension of the Penis, by pressing upon its Veins.

MUSCLES OF THE FEMALE PARTS OF GENERATION AND ANUS.

ERECTOR CLITORIDIS.

Similar to the Erector Penis in the Male; but smaller.

Insertion : Into the Crus and Body of the Clitoris.

SPHINCTER

SPHINCTER VAGINÆ.

Origin : From the Sphincter Ani, and from the posterior side of the Vagina, near the Perineum.—It passes along the outer end of the Vagina, covers the Corpus Cavernosum Vaginæ, and, going behind the Nymphæ, it has its

Insertion into the union of the Crura Clitoridis.

Action : To contract the external Orifice of the Vagina, by compressing its Corpus Cavernosum, from which it likewise pushes the Blood into the Nymphæ and Clitoris.

TRANSVERSUS PERINEI.

Origin : As in the Male.

Insertion : Into the upper part of the Sphincter Ani, and into a tough white Substance in the Perineum.

Action : Upon the Perineum and Anus, as in the Male.

SPHINCTER ANI.

Origin and course, as in the Male.

Insertion : Into the tough white Substance in the Perineum.

Action : To shut the Anus, and, by pulling down the Perineum, to assist in contracting the external Orifice of the Vagina.

LEVATOR ANI.

Origin : As in the Male. In its descent, it embraces the inferior part of the Vagina and Rectum.

Insertion :

Insertion : Into the Perineum, Sphincter Ani, extremity of the Vagina, and Rectum.

Action : Upon the Bladder and Rectum, as in the Male. It also assists in supporting and contracting the Vagina, and may, by pressing upon the Veins, contribute to the distension of the Cells of the Clitoris and Corpus Cavernosum Vaginæ.

MUSCLE OF THE OS COCCYGIS.

COCCYGEUS.

Origin : By a narrow point, from the Spinous Process of the Os Ischium.—In its passage, it gradually expands, and covers the inside of the posterior Sacro-Ischiatic Ligament.

Insertion : Into the whole length of the side of the Os Coccygis, and into the under end of the Os Sacrum.

Action : To move the Os Coccygis forwards, by which it must assist the Levator Ani in supporting or raising the end of the Rectum.

MUSCLES SITUATED WITHIN THE CAVITY OF THE ABDOMEN.

DIAPHRAGMA.

The Diaphragm forms a Fleehy and Tendinous Partition, which separates the Cavity of the Abdomen from that

that of the Thorax, and is perforated by several Holes, for the passage of Vessels and Nerves which go into, or out from the Abdomen. It is concave below, and convex above, the middle of it reaching as high within the Thorax as the fourth pair of Ribs. Above, it is covered by the Pleura, and below, by the Peritoneum; and is commonly divided into two portions, called Superior and Inferior Muscles of the Diaphragm.

SUPERIOR, or *Greater MUSCLE of the DIAPHRAGM.*

Origin: By Flethy Indentations, from the Cartilago Eniformis, and from the Cartilages of the seventh, and of all the inferior Ribs on both sides. From these different Origins, the Fibres run in a radiated manner, and have their

Insertion into a Cordiform Tendon, placed in the middle of the Diaphragm, and in which the Fibres of the opposite sides are interlaced.—Towards the right side, the Tendon is perforated by a triangular Hole for the passage of the Vena Cava Inferior; and to the upper convex part of it, the Pericardium and Mediastinum are connected.

INFERIOR, or LESSER MUSCLE, or *Appendix of the Diaphragm.*

Origin: By four Pair of Heads, of which one Pair in the middle, commonly called its Long, or Tendinous *Crura*, is the longest. The long *Crura* arise from the fore-part of the fourth Lumbar Vertebra, and adhere to the Bodies of all the Vertebrae of the Loins above this, by the intervention of the common Ligament covering these

these Bones. In their ascent, they leave an Oval Opening for the passage of the Aorta and Thoracic Duct. The other Heads arise from the third, and also from the second Lumbar Vertebra, and are placed farther out. From the different Heads the Muscular Fibres run upwards, and form, in the middle, two Flethy Columns, or Crura, which decussate, and leave an opening for the passage of the Œsophagus.

Insertion: By strong Flethy Fibres, into the posterior edge of the Cordiform, or middle Tendon.

Action: To enlarge the Cavity of the Thorax in Inspiration, by its Flethy part contracting, and bringing its two sides down from a convex to a plane Surface, the Abdominal Muscles at the same time yielding, but the Tendinous part of the Diaphragm remaining nearly in the same situation. In Expiration, the Diaphragm is replaced, chiefly by the action of the Abdominal Muscles. It is the Antagonist of the Abdominal Muscles in Inspiration, but acts in concert with them in Dejection and Vomiting.

QUADRATUS LUMBORUM.

Origin: Broad, Tendinous, and Flethy, from the posterior half of the Spine of the Os Ilium, and from a Ligament extended between it and the transverse Process of the last Lumbar Vertebra.

Insertion: Into the transverse Processes of all the Lumbar Vertebrae; into the last Rib, near the Spine; and, by a small Tendon, into the side of the last Dorsal Vertebra.

Action:

Action : To move the Loins to one side, pull down the last Rib, and, when both act, to bend the Loins forwards.

PSOAS PARVUS.

Origin : Flešhy, from the last Vertebra of the Back, and from one or two of the upper Vertebrae of the Loins. It sends off a slender Tendon which runs down by the inner side of the Psoas Magnus, and an Aponeurosis which expands upon the neighbouring Muscles.

Insertion : Into the Brim of the Pelvis, at the joining of the Os Ilium and Pubis.

Action : To assist in bending the Spine upon the Pelvis, or in raising the Pelvis.

This Muscle is frequently awanting.

PSOAS MAGNUS.

Origin : From the side of the Bodies, and from the transverse Processes of the last Dorsal, and of all the Lumbar Vertebrae, by an equal number of Flešhy Slips, which, uniting, form a thick strong Muscle, bounding the upper part of the side of the Pelvis, and passing down over the Os Pubis, behind *POUPART'S Ligament*.

Insertion : Tendinous and Flešhy, into the Trochanter Minor, and part of the Body of the Os Femoris.

Action : To bend the Thigh, and turn it a little outwards, or, when the Inferior Extremity is fixed, to assist in bending the Body.

ILIACUS

ILIACUS INTERNUS.

Origin : Fleſhy, from the Tranſverſe Proceſs of the laſt Lumbar Vertebra; from all the inner edge 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 Os Ilium.— It joins the Pſoas Magnus, where it begins to become Tendinous on the Os Pubis.

Infertion : Along with the Pſoas Magnus.

Action : To aſſiſt the Pſoas in bending the Thigh.

MUSCLES SITUATED UPON THE ANTERIOR PART
OF THE THORAX.

PECTORALIS MAJOR, or *Pectoralis*.

Origin : From the Sternal half of the Clavicle; from the edge of the Sternum, where it is connected with its fellow; and from the Cartilages of the fifth and ſixth Ribs, where it mixes with the Obliquus Externus. The Fibres from thence converge towards the Axilla, where they decuſſate, and ſend off a flat twiſted Tendon, which has its

Infertion into the Ridge at the outer edge of the Groove for lodging the Tendon of the long Head of the Biceps.

Action : To draw the arm towards the Sternum.

Between the Portions of the Muſcle ariſing from the
Clavicle

Clavicle and Sternum, there is a slight Separation, in consequence of which they have been considered by some Authors as two distinct Muscles.

PECTORALIS MINOR,

Or *Serratus Minor Anticus*.

Origin: Tendinous and Flefhy, in a ferrated manner, from the third, fourth, and fifth Ribs, near their Cartilages. Passing obliquely outwards, it becomes gradually narrower.

Infertion: Tendinous, into the point of the Coracoid Procefs of the Scapula.

Action: To bring the Scapula downwards and forwards, or to raife the Ribs.

SUBCLAVIUS.

Origin: Tendinous, from the Cartilage of the first Rib. It soon becomes Flefhy, and runs outwards, under the Clavicle, increafing in breadth.

Infertion: Into the under Surface of the Clavicle, from near its Head, as far outwards as the Coracoid Procefs of the Scapula.

Action: To pull the Clavicle, and with it the Scapula, downwards and forwards.

SERRATUS MAGNUS,

Or *Serratus Major Anticus*.

Origin: From the nine superior Ribs, by an equal number of Flefhy Digitations. It runs obliquely upwards
and

and backwards upon the side of the Thorax, and between it and the Subscapularis Muscle.

Inserion : Flefhy, into the whole length of the Base of the Scapula, and in a manner folded round it, between the *Inferion* of the Rhomboid, and the *Origin* of the Subscapularis Muscles.

Action : To move the Scapula forwards or downwards, according to the direction of its different Digitations, and, when the Scapula is forcibly raised, to assist in dilating the Thorax, by elevating the Ribs.

MUSCLES SITUATED BETWEEN THE RIBS, AND WITHIN THE THORAX.

INTERCOSTALES EXTERNI.

Origin : From the under edge of each Rib, excepting the twelfth. They run obliquely downwards and forwards, from the Spine to the joining of the Ribs with their Cartilages, from which, to the Sternum, they are discontinued, that place being occupied by an Aponeurosis.

Inserion : Into the upper edge of each Rib, immediately below that from which they take their respective *Origins*.

Portions of the External Intercostals, which arise from the Transverse Processes of the Vertebrae, and terminate in the Ribs immediately below, are termed by ALBINUS, *Levatores Costarum Breves*.—Other Portions, which arise in the same manner, but pass over one Rib, and terminate in the next below it, are named, by the same Author, *Levatores Costarum Longiores*.

INTERCOSTALES INTERNI.

Origin : The same with that of the External ; but they begin at the Sternum, and run downwards and backwards, decussating the former Muscles like the strokes of the letter X, and continuing as far as the Angle of the Ribs from which to the Spine they are wanting.

Insertion : In the same manner as the External.

Portions of the Internal Intercostals, near the under part of the Thorax, which pass over one Rib, and terminate in the next below it, are called, by DOUGLAS, *Costarum Depressores Proprii*.

Action of the Internal, as well as of the External Intercostals :—To enlarge the Cavity of the Thorax, by elevating the Ribs in the time of Inspiration ; and the obliquity of the one set balancing that of the other, allows them to be raised more immediately upwards.

From the obliquity of their Fibres, they are found to possess a greater power to raise the Ribs, than Fibres going in a perpendicular direction.

The External Intercostals cease near the Sternum, and the Internal near the Spine, to admit the ready motion of the Ribs ; for, had the former been continued to the Sternum, and the latter to the Spine, the parts of these Muscles supposed to be thus fixed, would of course have become Antagonists to the rest.

The Portions called *Levatores* and *Depressores Costarum*, assist in raising the Ribs, in the same manner as the rest of the Intercostales.

STERNO-COSTALIS, or *Triangularis Sterni*.

Origin : From the edges of the Cartilago Eniformis, and lower half of the middle Bone of the Sternum, within the Thorax. It runs upwards and outwards, behind the Cartilages of the Ribs.

Insertion : Generally by three Angular Terminations into the Cartilages of the third, fourth, and fifth Ribs, and sometimes, also, by a fourth Termination into the corresponding part of the Cartilage of the second or sixth Rib, near the union of the Cartilaginous with the Ossæous part of the Ribs.

Action : To depress the Ribs into which they are fixed, and, of consequence, to assist in contracting the Cavity of the Thorax during Expiration.

 MUSCLES SITUATED ON THE ANTERIOR PART
OF THE VERTEBRÆ OF THE NECK.

LONGUS COLLI.

Origin : From the side of the Bodies of the three superior Vertebræ of the Back, and from the Transverse Processes of the four Inferior Vertebræ of the Neck.

Insertion : Into the fore-part of the Bodies of all the Vertebræ of the Neck, by as many small Tendons, which are covered with Flesh.

Action : It bends the Neck forwards and to one side, or when both Muscles act, they immediately bend the Neck.

RECTUS CAPITIS ANTERIOR MAJOR,

Or *Rectus Anterior Longus*.

Origin : From the Transverse Processes of the third, fourth, fifth, and sixth Vertebrae of the Neck. It runs upwards, and a little inwards, covering the outer edge of the Longus Colli.

Insertion : Into the Cuneiform Process of the Occipital Bone, near its joining with the Os Sphenoides.

Action : To bend the Head forwards.

RECTUS CAPITIS ANTERIOR MINOR,

Or *Rectus Anterior Minor*.

Origin : From the fore part of the Atlas, opposite to its Superior Oblique Process. It runs obliquely inwards behind, and a little to the outside of the former Muscle.

Insertion : Into the Cuneiform Process of the Occipital Bone, immediately before the Condyles.

Action : To assist the Rectus Major.

RECTUS CAPITIS LATERALIS.

Origin : From the anterior part of the Transverse Process of the Atlas.—It goes obliquely outwards.

Insertion : Into the Occipital Bone, directly behind the Jugular Fossa.

Action : To incline the Head a little to one side.

MUSCLES

MUSCLES SITUATED UPON THE POSTERIOR PART
OF THE TRUNK.TRAPEZIUS or *Cucullaris*.

Origin : From the middle of the great arched Ridge of the Occipital Bone ; from its fellow over the Spinous Processes of the Cervical Vertebræ, by the intervention of a strong Tendon, called *Ligamentum Nuchæ*, or *Colli* ; from the Spinous Processes of the two Inferior Vertebræ of the Neck, and from all those of the Back ; adhering Tendinous to its fellow the whole length of its Origin.

Insertion : Into the Scapulary half of the Clavicle, into the Acromion, and into the Spine of the Scapula.

Action : To move the Clavicle and Scapula, according to the directions of its different Fibres. The superior Fibres, descending, raise the Shoulder ; the middle, running transversely, pull it backwards ; and the inferior Fibres, ascending, depress it. The whole acting together, bring it immediately back.—When the Scapula is fixed, the Muscle must assist in moving the Head backwards.

LATISSIMUS DORSI.

Origin : By a broad Tendinous Expansion, from the posterior part of the Spine of the Os Ilium ; from all the Spinous Processes of the Vertebræ extending between the under end of the Os Sacrum and sixth Vertebra of the Back ; and, by three or four Tendinous or

Fleshy Slips, from an equal number of inferior Ribs. The Tendon by degrees changes into a Muscle of great breadth, the inferior Fibres of which run upwards and outwards, and the superior transversely over the inferior Angle of the Scapula, receiving a small Slip from it in their way to the Axilla, where the Fibres of the Muscle in general are collected, twisted, and folded, like those of the Pectoral Muscle.

Insertion : By a strong thin Tendon, into the inner edge of the Groove for lodging the Tendon of the long Head of the Biceps Muscle.

Action : To pull the Arm downwards and backwards, and to roll the Os Humeri inwards, by which the Palm of the Hand is made to face backwards. When the large Pectoral Muscle acts at the same time with this one, the Arm is brought immediately down towards the Trunk.

The Latissimus Dorsi and Pectoralis Major form the Axilla, in which the great Vessels and Nerves, and likewise the Glands lie, which belong to the Arm.

SERRATUS POSTICUS INFERIOR.

Origin : By the same common Tendon with the Latissimus Dorsi, from the two Inferior Vertebrae of the Back, and from the three Superior of the Loins.

Insertion : By four Fleshy Slips, into the same number of Inferior Ribs, near their Cartilages.

Action : To depress the Ribs into which it is inserted, and thereby assist in contracting the Cavity of the Thorax in the time of Expiration.

RHOMBOIDEUS.

Origin: Tendinous, from the Spinous Processes of the four or five Superior Vertebrae of the Back; from the three Inferior of the Neck, and from the Ligamentum Nuchæ. —It descends obliquely, and has its

Insertion into the whole length of the Base of the Scapula.

Action: To draw the Scapula upwards and backwards.

This Muscle is frequently divided by an indistinct Line into two unequal Portions: The part arising from the Vertebrae of the Back, and fixed to the Base of the Scapula under the Spine, is commonly called *Rhomboides Major*, and the other part of the Muscle *Rhomboides Minor*.

SPLENIUS.

Origin: Tendinous, from the four Superior Spinous Processes of the Vertebrae of the Back; and Tendinous and Fleishy, from the five Inferior of the Neck. It adheres firmly to the Ligamentum Nuchæ. At the third Vertebra of the Neck, it recedes from its fellow, so that that part of the Complexus Muscle is seen.

Insertion: By as many Tendons, into the five Superior Transverse Processes of the Vertebrae of the Neck; and by a Tendinous and Fleishy Portion, into the posterior part of the Mastoid Process, and into the Os Occipitis, where it joins with that Process.

Action: To antagonise the Sterno-mastoideus, by bringing the Head, and upper Vertebrae of the Neck, obliquely

backwards and to one side. When the Splenii act together, they draw the Head directly backwards.

This Muscle is divided by ALBINUS into *Splenius Capitis*, or that which arises from the Neck, and goes to the Head; and *Splenius Colli*, or that which arises from the Back, and is fixed to the Neck.

SERRATUS POSTICUS SUPERIOR.

Origin : By a broad thin Tendon, from the Ligamentum Nuchæ, over the Spinous Processes of the three last Vertebrae of the Neck, and two uppermost of the Back. It goes obliquely downwards.

Insertion : By four Flethy Slips into the second, third, fourth, and fifth Ribs, under the upper and back part of the Scapula.

Action : To elevate the Ribs, and dilate the Thorax in Inspiration.

SACRO-LUMBALIS.

Origin : In common with the Longissimus Dorsi, Tendinous without, and Flethy within, from the side, and all the Spinous Processes of the Os Sacrum; from the posterior part of the Spine of the Os Ilium; and from all the Spinous and Transverse Processes of the Vertebrae of the Loins. The common Head fills up the space between the Os Ilium and Os Sacrum, and also the hollow of the Loins. At the under part of the Thorax, the Muscle begins to send off Tendons, which lie flat upon the Ribs, and become gradually longer the nearer they are to the Spine.

Insertion :

Infertion : Into the Angles of all the Ribs, by an equal number of Tendons.

From six or eight of the lower Ribs arise an equal number of Fleſhy Portions, which terminate in the inner ſide of this Muſcle, and get the name of *Muſculi Acceſſorii*, or *Additamentum ad Sacro-lumbalem*.

Action : To aſſiſt in raiſing and keeping the Trunk of the Body erect. It alſo aſſiſts the Serratus Inferior, and Quadratus Lumborum, in depressing the Ribs.

From the upper part of this Muſcle, a Fleſhy Slip, called *Cervicalis Descendens*, runs up to be fixed to the Tranſverſe Proceſſes of the fourth, fifth, and ſixth Vertebræ of the Neck, by three diſtinct Tendons. When it acts, it turns the Neck obliquely backwards and to one ſide.

LONGISSIMUS DORSI.

Origin : In common with the Sacro-lumbalis. It forms a large, thick, and ſtrong Muſcle, which fills the Hollow between the Spine and Angles of the Ribs, and which, becoming gradually ſmaller in its aſcent, has its

Infertion into the Tranſverſe Proceſſes of all the Vertebræ of the Back, chiefly by ſmall double Tendons; and, by a Tendinous and Fleſhy Slip, into the lower edge of each of the Ribs, excepting the two inferior, near their Tubercles.

From the upper part of this Muſcle, a round Fleſhy Slip runs up to join the Cervicalis Descendens.

Action : To extend the Trunk, and keep it erect.

SPINALIS DORSI.

Origin : By five Tendinous Slips, from the Spinous Proceſſes of the two upper Vertebræ of the Loins, and the three lower of the Back.—In its aſcent, it is incorporated with the Longiſſimus Dorsi, and has its

Infertion

Insertion into the Spinous Processes of the eight or nine uppermost Vertebræ of the Back, excepting the first, by as many Tendons.

Action: To fix the Vertebræ, and to assist in extending the Trunk and keeping it erect.

COMPLEXUS.

Origin: By distinct Tendons, from the Transverse Processes of the seven Superior Vertebræ of the Back, and four Inferior of the Neck; and by a Fleishy Slip, from the Spinous Process of the first Vertebra of the Back. In its passage upwards, it is intermixed with Tendinous and Fleishy parts.

Insertion: Into a Depression, under the large arched Ridge of the Occipital Bone.

The long Portion of this Muscle, which lies next the Spinous Processes, is more loose than the rest, and has a roundish Tendon in the middle of it, with a Fleishy Belly at each end, on which account it is called, by ALBINUS, *Biventer Cervicis*.

Action: To draw the Head backwards, and to one side; and when both act, to draw the Head directly backwards.

TRACHELO-MASTOIDEUS;

Or *Complexus Minor*, or *Mastoideus Lateralis*.

Origin: From the Transverse Processes of the three uppermost Vertebræ of the Back, and five lowest of the Neck, where it is connected to the *Transversalis Cervicis*, by as many thin Tendons, which unite into a slender Belly, and run up under the Splenius.

Insertion: Into the posterior Margin of the Mastoid Process, by a thin Tendon.

Action: To assist the Complexus: It pulls the Head, however, more to a side.

LEVATOR

LEVATOR SCAPULÆ,

Or *Levator Proprius*, or *Musculus Patientia*.

Origin : From the Transverse Processes of the five Superior Vertebrae of the Neck, by the same number of distinct Heads, which soon unite to form a flat Muscle, which runs downwards and outwards.

Insertion : Into the Superior Angle of the Scapula.

Action : To pull the Scapula upwards and a little forwards, as in shrugging the Shoulder ; and, when the Scapula is fixed, to pull the Neck a little to one side.

SEMI-SPINALIS DORSI, or *Transverso-spinalis Dorfi*.

Origin : 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.

Insertion : Into the Spinous Processes of the six or seven uppermost Vertebrae of the Back, and two lowest of the Neck, by as many Tendons.

Action : To extend the Spine obliquely backwards.

MULTIFIDUS SPINÆ.

Formerly *Transverso-Spinalis Lumborum*, *Transverso-Spinalis Dorfi*, and *Transverso-Spinalis Colli*.

Origin : From the side, and Spinous Processes of the Os Sacrum, and from that part of the Os Ilium which joins with the Sacrum ; from all the Oblique and Transverse Processes of the Vertebrae of the Loins ; from all
the

the Transverse Processes of the Vertebrae of the Back, and of the four Inferior of the Neck, by as many distinct Tendons, which soon become Flefhy, and run obliquely upwards and inwards.

Infertion : By distinct Tendons, into all the Spinous Processes of the Vertebrae of the Loins, Back, and Neck, excepting the Atlas.

Action : To extend the Spine obliquely, and pull it to a fide. When both Muscles act, they draw the Spine directly backwards.

SEMI-SPINALIS COLLI, or *Transverso-Spinalis Colli*.

Origin ; From the Transverse Processes of the six upper most Vertebrae of the Back, by an equal number of distinct Tendons, which run obliquely under the Complexus.

Infertion : Into the Spinous Processes of all the Vertebrae of the Neck, except the first and last.

Action : To extend the Neck obliquely backwards and to a fide.

TRANSVERSALIS COLLI.

Origin : From the Transverse Processes of the five uppermost Vertebrae of the Back, by the same number of Tendinous and Flefhy Slips. It runs between the Trachelo-Mastoideus, Splenius Colli, and Cervicalis Descendens.

Infertion : Into the Transverse Processes of all the Cervical Vertebrae, except the first and last.

Action : To turn the Neck obliquely backwards, and a little to one fide.

RECTUS CAPITIS POSTICUS MINOR, or *Rectus Minor*.

Origin: Tendinous, close to its fellow, from a small Protuberance which is in place of the Spinous Process of the first Vertebra of the Neck. It spreads out in its ascent, and has its

Insertion, Fleshy, in a Depression between the smaller Arch and Foramen Magnum of the Occipital Bone.

Action: To assist the following Muscle in drawing the Head backwards.

RECTUS CAPITIS POSTICUS MAJOR, or *Rectus Major*.

Origin: Fleshy, from the external part of the Spinous Process of the second Vertebra of the Neck. It becomes gradually broader, and goes obliquely upwards and outwards.

Insertion: Tendinous and Fleshy, into the Os Occipitis, at the outside of the Insertion of the Rectus Minor, part of which it covers and conceals.

Action: To pull the Head backwards, and to assist a little in its rotation.

OBLIQUUS CAPITIS INFERIOR.

Origin: Fleshy, from the Spinous Process of the second Vertebra of the Neck, at the outside of the Rectus Major. It forms a thick Belly, which runs upwards and outwards.

Insertion: Into the Transverse Process of the first Vertebra of the Neck.

Action: To roll the Head.

OBLIQUUS

OBLIQUUS CAPITIS SUPERIOR.

Origin : From the Transverse Process of the first Vertebra of the Neck. It passes upwards and a little inwards.

Insertion : Into the Occipital Bone, at the outer part of the Insertion of the Rectus Major.

Action : To assist in drawing the Head backwards, and a little to one side.

SCALENUS ANTERIOR.

Origin : Tendinous and Fleehy, from the upper part of the first Rib, near its Cartilage.

Insertion : Into the Transverse Processes of the fourth, fifth, and sixth Vertebrae of the Neck, by as many Tendons.

SCALENUS MEDIUS.

Origin : From the upper and outer part of the first Rib, from its root to near its Cartilage.

Insertion : Into the Transverse Processes of all the Vertebrae of the Neck, by as many strong Tendons.

The Subclavian Artery, and Nerves which form the Brachial Plexus, pass between this and the former Muscle.

SCALENUS POSTERIOR.

Origin : From the upper edge of the second Rib, near the Spine.

Insertion : Into the Transverse Processes of the fifth and sixth Vertebrae of the Neck.

Action

Action of the Three Scaleni : To bend the Neck to one side ; or, when the Neck is fixed, to raise the Ribs, and dilate the Thorax.

INTERSPINALES COLLI.

The spaces between the Spinous Processes of the Vertebrae of the Neck, most of which are forked, are occupied by double Flethy Portions, which have their

Origin from each Inferior Spinous Process, and their *Insertion* into each Superior.

Action : To draw these Processes nearer to each other, and of consequence the Neck a little backwards.

INTERTRANSVERSALES COLLI.

The spaces between all the Transverse Processes of the Vertebrae of the Neck, which are also forked, are filled up in like manner with double Flethy Portions.

Action : To draw these Processes towards each other, and turn the Neck a little to one side.

INTERSPINALES AND INTERTRANSVERSALES DORSI.

These are rather small Tendons than Muscles, serving to connect the Spinal and Transverse Processes.

INTERSPINALES LUMBORUM.

They are of the same nature with the Interspinales and Intertransversales Dorsi.

INTER-

INTERTRANSVERSALES LUMBORUM,

• Are five distinct Muscles which occupy the Spaces between the transverse Processes of the last Dorsal and all the Lumbar Vertebræ, and serve to draw them a little towards each other.

MUSCLES

M U S C L E S

OF

THE SUPERIOR EXTREMITY.

MUSCLES ARISING FROM THE SCAPULA.

SUPRA-SPINATUS.

Origin : Flefhy, from all the Foffa Supra-Spinata and from the Spine and Superior Coffa of the Scapula. It paffes under the Acromion, adhering to the Capfular Ligament of the Joint.

Infertion : Tendinous, into the large Tubercle on the Head of the Os Humeri.

Action : To raife the Arm, and at the fame time to pull the Capfular Ligament from between the Bones, to prevent it from being pinched.

INFRA-SPINATUS.

Origin : Flefhy, from all that part of the Dorsum of the Scapula which is below its Spine; and from the Spine itfelf, as far as the Cervix of the Scapula. The Fibres run obliquely towards a Tendon in the middle of

the Muscle, which runs forwards, and adheres to the Capsular Ligament.

Insertion : By a flat thick Tendon, into the upper and posterior part of the large Protuberance on the Head of the Os Humeri.

Action : To roll the Os Humeri outwards; to assist in raising, and in supporting it when raised; and to pull the Ligament from between the Bones.

These two Muscles are covered by an Aponeurosis, which extends between the Costæ and edges of the Spine of the Scapula, and gives rise to many of the Muscular Fibres.

TERES MINOR.

Origin : Flešhy, from the inferior Costa of the Scapula. It ascends along the under edge of the Infra-Spinatus, adheres to the Capsular Ligament, and has its

Insertion, Tendinous, into the back-part of the large Protuberance on the Head of the Os Humeri, a little below the Infra-Spinatus.

Action : To roll the Os Humeri outwards, and draw it backwards, and to prevent the Ligament from being pinched between the Bones.

TERES MAJOR.

Origin : Flešhy, from the Dorsal side of the inferior Angle of the Scapula, and from a small part of its inferior Costa. It is situated at the under part of the Teres Minor, and sends off a broad flat Tendon, which accompanies

panies that of the Latissimus Dorsi, and, along with it, has its

Insertion into the Ridge at the inner side of the Groove for lodging the Tendon of the long Head of the Biceps Muscle.

Action: To roll the Humerus inwards, and to draw it backwards and downwards.

DELTOIDES.

Origin: Flefhy, from all the outer part of the Clavicle unoccupied by the Pectoralis Major, from which it is separated by a small Fiffure: Tendinous and Flefhy from the Acromion, and lower Margin of almost the whole Spine of the Scapula, opposite to the Insertion of the Trapezius.

From these Origins it runs, under the appearance of three Muscles going in different directions and separated from each other by slight Fiffures; viz. from the Clavicle outwards, from the Acromion downwards, and from the Spine of the Scapula forwards; and is composed of a number of Fasciculi, forming a strong Flefhy Muscle, which covers the Joint of the Os Humeri.

Insertion: By a short and strong Tendon, into a rough Surface, on the outer side of the Os Humeri, near its middle, where the Fibres of this Muscle intermix with part of the Brachialis Externus.

Action: To pull the Arm directly outwards and upwards, and a little forwards or backwards, according to the different directions of its Fibres.

CORACO-BRACHIALIS.

Origin : Tendinous and Flefhy, from the fore-part of the Coracoid Procefs of the Scapula, in common with the fhort Head of the Biceps Mufcle, to which it adheres through the greater part of its length.

Infertion : Tendinous and Flefhy, into the internal part of the Os Humeri, near its middle, where it fends down an Aponeurofis to the internal Condyle of the Os Humeri.

Action : To bring the Arm obliquely upwards and forwards.

SUBSCAPULARIS.

Origin : Flefhy, from the three Coftæ, and whole inner Surface of the Scapula. It is compofed of a number of Tendinous and Flefhy portions, which run in a radiated manner, and make prints on the Bone. In its paffage outwards, it adheres to the Capfular Ligament of the Joint, and has its

Infertion, Tendinous, into the upper part of the internal Protuberance at the Head of the Os Humeri.

Action : To roll the Arm inwards, draw it to the fide of the Body, and to prevent the Capfular Ligament from being pinched.

MUSCLES

MUSCLES CHIEFLY SITUATED ON THE ARM, SERVING
FOR THE MOTIONS OF THE FORE-ARM.

APONEUROSIS OF THE SUPERIOR EXTREMITY.

The greater part of the Superior Extremity is covered by a Tendinous Membrane or Aponeurosis, which arises from the Bones of, and Muscles on, the Shoulder.

On the Humerus, it incloses the Flexor and Extensor Muscles of the Fore-Arm, and is connected to the Ridges and Condyles at the under end of the Os Humeri.

At the bending of the Elbow, it receives considerable additions from the Tendons of the Biceps and Triceps Muscles of the Fore-Arm, where the Fibres from the opposite sides decussate each other.

It becomes thicker and stronger on the Fore-Arm, and forms a firm covering to the Muscles there.

In its descent, it gives off Partitions among the Muscles, and these are fixed to the Radius and Ulna, the Membrane itself being lost insensibly upon the Hand.

It is thicker and stronger on the outer than upon the inner side of the Extremity, particularly on the Fore-Arm, at the under and back part of which it forms a thick and strong Band, which, running transversely, gets the name of *Ligamentum Carpi Annulare Posterius*.

The Use of this, and of the Aponeuroses in other parts of the Body, is to brace the Muscles, by keeping them in

their proper place while in action, and to give Origin to many of the Muscular Fibres which lie immediately under them.

BICEPS FLEXOR CUBITI, or *Biceps*.

Origin : By two Heads : The outer one, called its *Long Head*, begins by a slender Tendon from the upper edge of the Glenoid Cavity of the Scapula ; passes over the Ball of the Os Humeri within the Joint ; and, in its descent without the Joint, is inclosed in a Groove upon the upper and fore part of the Bone, by a Ligament which proceeds from the Ligamentum Capsulare, and adjacent Tendons. The inner one, called its *Short Head*, arises, Tendinous and Flethy, from the Coracoid Process of the Scapula, in common with the Coraco-Brachialis Muscle. A little below the middle of the fore-part of the Os Humeri, the two Heads unite, and form a thick Flethy Belly.

Insertion : By a strong roundish Tendon, into the Tubercle at the upper and inner part of the Radius, and by a Tendinous Expansion into the Aponeurosis of the Fore-Arm, which it likewise assists in forming.

Action : To bend the Fore-Arm, and to assist the Supinator Muscles in rolling the Radius outwards, and of consequence turning the Palm of the Hand upwards.

BRACHIALIS INTERNUS.

Origin : Flethy, from the middle of the Os Humeri or Brachii, at each side of the Deltoides, covering all, and attached to most of the under and fore part of the Bone.

It

It runs over the Joint, adhering firmly to the Capsular Ligament.

Infertion : By a strong short Tendon, into the Coronoid Process of the Ulna.

Action : To bend the Fore-Arm, and to prevent the Ligament of the Joint from being pinched.

TRICEPS EXTENSOR CUBITI.

Origin : By three Heads : The first, or *long* Head, broad and Tendinous, from the inferior Costa of the Scapula, near its Cervix : The second or *short* Head, by an acute Tendinous, and Fleshy beginning, from the outer and back part of the Os Humeri, a little below its upper extremity. The third, called *Brachialis Externus*, arises, by an acute beginning, from the back-part of the Os Humeri, near the Infertion of the Teres Major. The three Heads unite about the middle of the Humerus, and cover the whole posterior part of that Bone, adhering to it in their descent.

Infertion : Into the upper and outer part of the Olecranon of the Ulna, and partly into the Condyles of the Os Humeri, adhering closely to the Ligament.

Action : To extend the Fore-Arm.

ANCONEUS.

Origin : Tendinous, from the posterior part of the external Condyle of the Os Humeri. It soon becomes Fleshy, and part of its Flesh is likewise continued from the third Head of the Triceps. It descends under a triangular form, and has its

Insertion, Fleshy and thin, into a Ridge on the outer and posterior edge of the Ulna, a little below the Olecranon.

Action : To assist the Triceps in extending the Fore-Arm.

MUSCLES ON THE FORE-ARM AND HAND, SERVING FOR THE MOTIONS OF THE HAND AND FINGERS.

To prevent confusion in the application of the terms *Outer* and *Inner*, when the Muscles are described in the prone state of the Hand ;—the Arm is here supposed to hang by the side of the Body, with the Palm turned forwards, so that the Radius and Thumb are upon the outer, and the Ulna and Little Finger upon the inner side.

PALMARIS LONGUS.

Origin : Tendinous from the internal Condyle of the Os Humeri. It soon becomes Fleshy, and sends off a long slender Tendon, which has its

Insertion into the Ligamentum Carpi Annulare Anterior, and into the

Aponeurosis Palmaris, which begins at the anterior Annular Ligament of the Wrist ; and, after expanding and covering the greater part of the Palm of the Hand, is
fixed

fixed to the Roots of all the Fingers by an equal number of double Slips.

Action of the Palmaris Muscle : To bend the Hand, and stretch the Aponeurosis Palmaris.

This Muscle is frequently wanting, but the Aponeurosis is always to be found.

PALMARIS BREVIS.

Origin : By small bundles of Flefhy Fibres, from the Ligamentum Carpi Annulare, and Aponeurosis Palmaris.

Infertion : Into the Skin and Fat which cover the Abductor Minimi Digiti, and into the Os Pisiforme.

Action : To assist in contracting the Palm of the Hand.

FLEXOR CARPI RADIALIS, or *Radialis Internus*.

Origin : Tendinous and Flefhy, from the inner Condyle of the Os Humeri, and from the fore and upper part of the Ulna, between the Pronator Radii Teres and Flexor Sublimis, to which it firmly adheres. It forms a long Tendon, which passes down near the Radius, goes through a Fossa in the Os Trapezium, and becomes flat at its under extremity.

Infertion : Into the fore and upper part of the Metacarpal Bone which sustains the Fore-finger.

Action : To bend the Wrist, and to assist in the pronation of the Hand.

FLEXOR CARPI ULNARIS, or *Ulnaris Internus*.

Origin : Tendinous, from the internal Condyle of the Os Humeri ; and, by a small Flefhy beginning, from the
corresponding

corresponding side of the Olecranon. It passes along the inner side of the Ulna, from which also it originates for a considerable way down. A number of Flethy Fibres likewise arise from the Aponeurosis of the Fore-arm.

Insertion : By a strong Tendon, into the Os Pisiforme.

Action : To assist the former Muscle in bending the Wrist.

EXTENSOR CARPI RADIALIS LONGIOR,

Or *Radialis Externus Longior.*

Origin : Broad, thin, and Flethy, immediately below the Supinator Longus, from the lower part of the Ridge of the Os Humeri, above its external Condyle. It sends off a long flat Tendon, which passes down, first upon the outer, and then upon the back part of the Radius, descending in a Groove there, and going under the Annular Ligament of the Wrist.

Insertion : Into the upper, back, and outer part of the Metacarpal Bone of the Fore-finger.

Action : To extend the Wrist, and bring the Hand backwards.

EXTENSOR CARPI RADIALIS BREVIOR,

Or *Radialis Externus Brevior.*

It is similar to the former Muscle, but its Flethy Belly is placed farther down.

Origin : Tendinous, in common with the Extensor Longior, from the external Condyle of the Os Humeri, and from the Ligament which connects the Radius to it :

Passing

Passing down upon the back-part of the Radius, its Tendon goes under the Annular Ligament, in the same Channel with the Tendon of the Extensor Longior.

Insertion : Into the upper and back part of the Metacarpal Bone of the Middle Finger.

Action : To assist the former Muscle in extending the Wrist ; or, with it and the Flexor Carpi Radialis, to draw the Hand to the side next the Thumb.

EXTENSOR CARPI ULNARIS, or *Ulnaris Externus*.

Origin : Tendinous, from the external Condyle of the Os Humeri ; and, in its progress, Fleishy, from the middle of the Ulna where it passes over it.

Its round Tendon is inclosed by a Membranous Sheath, in a Groove at the back-part of the extremity of the Ulna.

Insertion : Into the posterior and upper part of the Metacarpal Bone of the Little Finger.

Action : To assist the two former Muscles in extending the Wrist ; or, with the assistance of the Flexor Ulnaris, to draw the Hand towards the side next the Little Finger.

FLEXOR DIGITORUM SUBLIMIS, or PERFORATUS.

Origin : Tendinous and Fleishy, from the internal Condyle of the Os Humeri ; Tendinous, from the root of the Coronoid Process of the Ulna ; and Membranous and Fleishy from the middle of the fore-part of the Radius. Its Fleishy Belly sends off four round Tendons before it passes under the Annular Ligament of the Wrist. In their course, they are connected to those of the following Muscle

Muscle by fine Membranous Webs, and upon the Fingers are inclosed in strong Tendinous Sheaths.

Insertion : Into the anterior and upper part of the second Phalanx of the Fingers, being near the under part of the first Phalanx, split and twisted to form a Passage, and at the same time a kind of Sheath for the Tendons of the Flexor Profundus.

Action : To bend the second, and then the first Phalanx of the Fingers.

FLEXOR DIGITORUM PROFUNDUS, or PERFORANS.

Origin : Flethy, from the external side and upper part of the Ulna, for some way down; and from a large share of the Interosseous Ligament. It descends behind the Flexor Sublimis, and, like it, splits into four Tendons, a little before it passes under the Annular Ligament; and these pass through the Slits in the Tendons of the Flexor Sublimis.

Insertion : Into the anterior and upper part of the third Phalanx of the Fingers.

Action : To bend the last Joint of the Fingers.

LUMBRICALES.

Origin : Thin and Flethy, from the outside of the Tendons of the Flexor Profundus, a little above the lower edge of the Annular Ligament of the Wrist. At the under ends of the Metacarpal Bones, they send off long slender Tendons, which have their

Insertion into the outer sides of the broad Tendons of the

the Interoffei Muscles, about the middle of the first Phalanx.

Action: To bend the first Phalanx, and increase the Flexion of the Fingers while the long Flexors are in full action.

EXTENSOR DIGITORUM COMMUNIS.

Origin: Tendinous and Flefhy, from the external Condyle of the Os Humeri, where it adheres to the Supinator Radium Brevis. It paffes down upon the back-part of the Fore-arm, and before it goes under the posterior Annular Ligament of the Wrist, it fplits into three or four Tendons, some of which may be divided into smaller ones.

Upon the back of the Metacarpal Bones, the Tendons become broad and flat, and near the Heads of these Bones fend Aponeurotic Expansions to each other.

Infertion: Into the posterior part of all the Bones of the four Fingers, by a Tendinous Expansion.

Action: To extend all the Joints of the Fingers.

SUPINATOR RADII LONGUS.

Origin: By an acute Flefhy beginning, from the Ridge of the Os Humeri, above the external Condyle, nearly as high as the middle of the Bone. It forms a thick Flefhy Belly, which covers the upper part of the Extensor Carpi Radialis Longior; and about the middle of the Fore-arm fends a tapering Tendon along the edge of the Radius.

Infertion: Into the outer fide of the under end of the Radius.

Action: To roll the Radius outwards, and of confequence

quence to turn the Hand into a supine situation, or with the Palm forwards.

SUPINATOR RADII BREVIS.

Origin : Tendinous, from the external Condyle of the Os Humeri; and Tendinous and Flefhy, from the outer and upper part of the Ulna, and from the Interofseous Ligament. It paffes over the external edge of the Radius.

Infertion : Into the upper and fore part of the Radius.

Action : To affift the Supinator Longus.

PRONATOR RADII TERES.

Origin : Flefhy, from the internal Condyle of the Os Humeri, and Tendinous from the Coronoid Procefs of the Ulna. It paffes obliquely acrofs the upper end of the Flexor Mufcles of the Wrist, and is of a tapering form.

Infertion : Thin, Tendinous, and Flefhy, into the middle of the posterior part of the Radius.

Action : To roll the Radius inwards, by which it brings the Palm of the Hand backwards, or into a ftate of Pronation.

PRONATOR RADII QUADRATUS.

Origin : Broad, Tendinous, and Flefhy, from the under and inner part of the Ulna. The Fibres run tranfverfely.

Infertion : Into the under and fore part of the Radius.

Action : To affift the Pronator Teres.

FLEXOR

FLEXOR LONGUS POLLICIS MANUS,

Or *Flexor Tertii Internodii.*

Origin : By an acute Flefhy beginning, from the fore-part of the Radius and Interoffeous Ligament, the Origin extending from the Tubercle of the Bone, as far as the Pronator Quadratus Mufcle. It has frequently another Origin, by a diftinct Flefhy Slip, from the internal Condyle of the Os Humeri.

Infertion : Into the laft Joint of the Thumb, its Tendon having paffed under the anterior Annular Ligament of the Wrift.

Action : To bend the laft Joint of the Thumb.

FLEXOR BREVIS POLLICIS,

Or *Flexor Secundi Internodii.*

Origin : From the Os Trapezoides, Magnum, and Unciforme. It is divided into two Portions, which form a Groove for the Tendon of the Flexor Longus Pollicis.

Infertion : Into the Offa Sefamoidea, and Base of the firft Bone of the Thumb.

Action : To bend the firft Joint of the Thumb.

OPPONENS POLLICIS,

Or *Flexor Offis Metacarpi Pollicis*, or *Flexor Primi Internodii.*

Origin :- Flefhy, from the Os Trapezium and anterior Annular Ligament of the Wrift. It lies immediately under the Abduktor Pollicis.

Infertion :

Insertion : Tendinous and Flefhy, into the under and fore part of the Metacarpal Bone of the Thumb.

Action : To bring the Thumb inwards, fo as to make it oppofe the Fingers, from which circumftance it has derived its name.

EXTENSOR OSSIS METACARPI POLLICIS.

Origin : Flefhy, from the middle of the posterior part of the Ulna, Radius, and Interoffeous Ligament. It runs obliquely over the Radius, fending one, or more frequently two Tendons, through an Annular Sheath.

Insertion : Into the Os Trapezium, and upper and back part of the Metacarpal Bone of the Thumb.

Action : To extend the Metacarpal Bone of the Thumb, and draw it from the Fingers.

EXTENSOR PRIMI INTERNODII POLLICIS,

Or *Extensor Minor*.

Origin : Flefhy, from the back-part of the Ulna, and from the Interoffeous Ligament, near the former Mufcle, by the fide of which it runs.

Insertion : Tendinous, into the posterior part of the firft Bone of the Thumb : A portion of it may be traced as far as the fecond Bone.

Action : To extend the firft Joint of the Thumb.

EXTENSOR SECUNDI INTERNODII, or *Extensor Major*.

Origin : By an acute, Tendinous, and Flefhy beginning, from the middle of the back-part of the Ulna, and
from

from the Interosseous Ligament. Its Tendon runs through a small Groove at the under, inner, and back part of the Radius.

Insertion : Into the last Bone of the Thumb.

Action : To extend the last Joint of the Thumb.

ABDUCTOR POLLICIS.

Origin : Broad, Tendinous, and Fleshy, from the Ligamentum Carpi Annulare, and from the Os Trapezium. It lies immediately under the Skin, and over the Opponens Muscle.

Insertion : Tendinous, into the outer side of the root of the first Bone of the Thumb.

Action : To draw the Thumb from the Fingers.

A particular portion on the inner side of this Muscle is called, by ALBINUS, *Abductor Brevis Alter*.

ADDUCTOR POLLICIS.

Origin : Fleshy, from almost the whole length of the Metacarpal Bone of the Middle Finger. Going across the Metacarpal Bone of the Fore-finger, its Fibres converge, and send off a short Tendon.

Insertion : Into the inner part of the root of the first Bone of the Thumb.

Action : To pull the Thumb towards the Fingers.

INDICATOR, or *Extensor Indicis Proprius*.

Origin : By an acute Fleshy beginning, from the middle of the posterior part of the Ulna, at the inner side of the Extensor Secundi Internodii Pollicis. Its Tendon passes

under the same Ligament with the Extensor Digitorum Communis, with part of which it has its

Insertion into the posterior part of the Fore-finger.

Action : To assist the common Extensor in extending all the Joints of this Finger ; as in pointing at any thing, hence called *Indicator*.

ABDUCTOR INDICIS.

Origin : From the Os Trapezium, and from the upper part and inner side of the Metacarpal Bone of the Thumb.

Insertion : By a short Tendon, into the outer and back part of the first Bone of the Fore-finger.

Action : To bring the Fore-finger towards the Thumb.

ABDUCTOR MINIMI DIGITI.

Origin : Flethy, from the Os Pisiforme, and from that part of the Ligamentum Carpi Annulare Anterior next it.

Insertion : Tendinous, into the inner side of the Base of the first Bone of the Little Finger.

Action : To draw the Little Finger from the rest.

ADDUCTOR MINIMI DIGITI, or *Metacarpeus*.

Origin : Flethy, from the Hook-like Process of the Os Unciforme, and from that part of the anterior Annular Ligament of the Wrist next it. Passing obliquely over the under end of the former Muscle, it has its

Insertion, Tendinous, into the inner side, and anterior or under extremity of the Metacarpal Bone of the Little Finger.

Action :

Action : To bend the Metacarpal Bone, and bring this Finger towards the rest.

FLEXOR PARVUS MINIMI DIGITI.

Origin : Like that of the former Muscle, but a little farther down, the Belly of the Muscle lying deeper.

Insertion : By a roundish Tendon, into the inner part of the Base of the first Bone of this Finger.

Action : To bend the Little Finger, and assist the Adductor.

INTEROSSEI.

Origin : From the side of the Metacarpal Bones. They fill up the spaces between these, and are something similar to the Lumbricales, but larger.

Insertion : By slender Tendons, along with those of the Lumbricales, into the sides of the Tendinous Expansions of the Extensor Digitorum Communis.

Action : To give the Fingers their lateral motions, and to assist a little, according to their situations, in bending or extending the first Phalanx of the Fingers.

Of the Interossei, three, seen in the Palm of the Hand, arise with single Heads, and are called *Interni*; and four on the back of the Hand, with double Heads, termed *Externi*, or *Bicipites*. Part of the Externi, however, are also seen in the Palm of the Hand.

INTEROSSEI INTERNI.

PRIOR INDICIS.

Origin : From the outer part of the Metacarpal Bone of the Fore-finger.

Insertion : Into the outside of the Tendon on the back of the Fore-finger.

Action : To draw that Finger outwards, towards the Thumb.

POSTERIOR INDICIS.

Origin : From the inner part of the Metacarpal Bone of the Fore-finger.

Insertion : Into the inside of the Tendon on the back of the Fore-finger.

Action : To draw the Fore-finger inwards.

PRIOR ANNULARIS.

Origin : From the outside of the Metacarpal Bone of the Ring-finger.

Insertion : Into the outside of the Tendon, on the back of the Ring-finger.

Action : To draw the Ring-finger outwards.

INTEROSSEUS AURICULARIS.

Origin : From the outside of the Metacarpal Bone of the Little Finger.

Insertion : Into the outside of the Tendon on the back of the Little Finger.

Action : To draw the Little Finger outwards.

INTER.

INTEROSSEI EXTERNI.

PRIOR MEDII DIGITI.

Origin : From the corresponding sides of the Metacarpal Bones of the Fore and Middle Fingers.

Insertion : Into the outside of the Tendon on the back of the Middle Finger.

Action : To draw the Middle Finger outwards.

POSTERIOR MEDII DIGITI.

Origin : From the corresponding sides of the Metacarpal Bones of the Middle and Ring Fingers.

Insertion : Into the inside of the Tendon on the back of the Middle Finger.

Action : To draw the Middle Finger inwards.

POSTERIOR ANNULARIS.

Origin : From the corresponding sides of the Metacarpal Bones of the Ring and Little Fingers.

Insertion : Into the inside of the Tendon on the back of the Ring-finger.

Action : To draw the Ring-finger inwards.

M U S C L E S
OF
THE INFERIOR EXTREMITY.

MUSCLES ON THE PELVIS AND THIGH, SERVING
FOR THE MOTIONS OF THE THIGH AND LEG.

APONEUROSIS OF THE INFERIOR EXTREMITY.

Previous to the description of the Muscles of the Inferior Extremity, it is proper to take notice of a Tendinous Expansion, which, as in the Superior Extremity, forms a general Covering to the Muscles, and sends off Partitions between them, to be connected to the Ridges and Processes of the Bones.

It is thick and strong on the outside of the Thigh and Leg, but towards the inner side of both, particularly on the former, it gradually turns thinner, and has rather the appearance of Cellular Membrane.

It descends from the Processes and other Projections on the outside of the Bones of the Pelvis, especially from the Tendons of the external Layers of Muscles of the Loins and Abdomen.

A little below the Trochanter Major, it is intimately connected to the Linea Aspera; and at the Joint of the Knee, it receives additions from the Tendons of the Extensors of the Leg, and is there connected with the outer and inner sides of the Head of the Tibia and Fibula. In the Leg, it is firmly fixed to the Spine of the Tibia; and at the under end, to the Bones of the Ankle, where part of it is thicker and stronger than the rest, and forms the Annular Ligament of the Tarsus. It is lost at last upon the Foot.

It serves the same general purposes with the Aponeurosis of the Superior Extremity.

PSOAS MAGNUS. }
 ILIACUS INTERNUS. } See p. 142. 143.

PECTINALIS, or *Pectineus*.

Origin: Broad and Flethy, from the upper and fore part of the Os Pectinis, or Pubis, immediately above the Foramen Thyroideum. It runs downwards and outwards at the inner side of the Psoas Magnus Muscle.

Insertion: By a flat and short Tendon, into the Linea Aspera of the Os Femoris, a little below the Trochanter Minor.

Action: To pull the Thigh upwards and inwards, and to give it, and of consequence the Foot, a degree of rotation outwards.

TRICEPS ADDUCTOR FEMORIS.

Under this appellation are comprehended three distinct Muscles, viz.

ADDUCTOR LONGUS FEMORIS.

Origin: By a strong roundish Tendon, from the upper and fore part of the Os Pubis, and Ligament of the Synchondrosis, at the inner side of the Pectinalis: It runs downwards and outwards, and has its

Insertion, By a broad flat Tendon, into the middle of the Linea Aspera.

ADDUCTOR BREVIS FEMORIS.

Origin: Tendinous, from the Os Pubis, at the side of its Symphysis, below and behind the former Muscle. It runs obliquely outwards.

Insertion: By a short flat Tendon, into the inner 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 MAGNUS FEMORIS.

Origin: From the side of the Symphysis of the Pubis, a little lower than the former. The Origin is continued downwards from the Crus and Tuberosity of the Os Ischium. The Fibres run outwards and downwards, spreading out wide, and forming a very large Muscle.

Insertion: Into the whole length of the Linea Aspera,
the

the under part of the Muscle extending along the Ridge which leads to the inner Condyle of the Os Femoris. It is also fixed by a roundish Tendon, into the upper part of that Condyle, a little above which the Femoral Artery, taking a Spiral turn towards the Ham, passes between the Tendon of this Muscle and the Bone.

Action of the three Adductors: To bring the Thigh inwards and upwards, according to the different directions of their Fibres, and to assist a little in rolling it outwards.

OBTURATOR EXTERNUS.

Origin: By a semicircular Margin, from the parts of the Os Pubis and Ischium, which form the anterior half of the Foramen Thyroideum, and from the Membrane which fills up that Foramen. The Fibres are collected like rays towards a centre, and pass outwards over the back-part of the Cervix of the Os Femoris.

Insertion: By a strong round Tendon, into the Cavity at the inner and back part of the root of the Trochanter Major, adhering in its course to the Capsular Ligament of the Thigh-Bone.

Action: To roll the Thigh-Bone obliquely outwards, and to prevent the Capsular Ligament from being pinched.

GLUTEUS MAXIMUS.

Origin: Fleehy, from the back-part of the Spine of the Ilium; from the under and outer part of the Os Sacrum; from the Os Coccygis; and from the posterior Sacro-
Sciatic

Sciatic Ligament over which part of the inferior edge hangs in a Flap. The Fibres run obliquely forwards, and a little downwards, to form a thick broad Muscle, which is composed of distinct coarse Fasciculi. The upper part of it covers almost the whole of the Trochanter Major, and it is intimately connected with the broad Tendon of the *Tensor Vaginae Femoris*.

Insertion : By a strong, thick, and broad Tendon, into the upper and outer part of the Linea Aspera, along which it is continued for some way down.

Action : To extend the Thigh, and pull it backwards and a little outwards.

GLUTEUS MEDIUS.

Origin : Flefhy, from all that part of the Spine of the Os Ilium which is unoccupied by the Gluteus Maximus; from the upper part of the Dorsum of that Bone; and from an Aponeurosis which covers the Muscle, and joins the Fascia of the Thigh. It sends off a broad Tendon, which has its

Insertion into the outer and back part of the Trochanter Major.

Action : To pull the Thigh outwards, and a little backwards. The fore-part of the Muscle assists in rolling it inwards.

GLUTEUS MINIMUS.

Origin : Flefhy, from the lower half of the Dorsum of the Os Ilium. The Origin being continued from the superior anterior Spinous Process, along a rising of the
Bone,

Bone, as far as the great Sciatic Notch, it runs in a radiated manner to a strong flat Tendon, which has its

Insertion into the fore and upper part of the Trochanter Major.

Action : To assist the former in pulling the Thigh outwards, and a little backwards. It also acts, along with other Muscles, in rolling it inwards.

PYRIFORMIS.

Origin : Within the Pelvis, by three Tendinous and Flethy Heads, from the second, third, and fourth pieces of the Os Sacrum ; and, becoming round and tapering, it passes out of the Pelvis, along with the Sciatic Nerve, through the great Notch of the Ilium from which it receives the addition of a few Flethy Fibres.

Insertion : By a roundish Tendon, into the upper part of the Cavity, at the inner side of the root of the Trochanter Major.

Action : To assist in the Abduction of the Thigh, and in its rotation outwards.

GEMINI, or *Gemelli*.

Origin : By two distinct Heads ; the superior from the Spinous Process, and the inferior from the Tuberosity of the Os Ischium and from the Sacro-Sciatic Ligament. The two Heads are united by a Tendinous and Flethy Membrane, and form a Sheath for the reception of the Tendon of the Obturator Internus Muscle.

Insertion : Tendinous and Flethy, into the Cavity at the inner side of the root of the Trochanter Major, on
each

each side of the Tendon of the Obturator Internus, to which they firmly adhere.

Action : To roll the Thigh outwards, and to prevent the Tendon of the Obturator Internus from starting out of its place while the Muscle is in action.

OBTURATOR INTERNUS, formerly *Marfupialis*.

Origin : Within the Pelvis, by a semicircular Flefhy margin, from the anterior half of the Foramen Thyroidæ, and, in part, from the Obturator Ligament.—Its Fibres converge, and fend off a round Tendon which paffes over the Os Ifchium, between the Spine and Tuber of that Bone, in the manner a Rope paffes over a Pulley.—Where it goes over the Capfular Ligament of the Thigh-bone, it is inclofed in the Sheath of the Gemini Muscles.

Infertion : By a round Tendon, along with the Gemini Muscles, into the large Pit at the root of the Trochanter Major.

Action : To roll the Thigh obliquely outwards.

QUADRATUS FEMORIS.

Origin : Tendinous and Flefhy, from the outer side of the Tuberosity of the Os Ifchium. It runs tranfverfely outwards.

Infertion : Flefhy, into a rough Ridge continued from the root of the great to that of the fmall Trochanter.

Action : To roll the Thigh outwards.

The Pyriform, Gemini, Quadratus, and Obturatores
Muscles,

Muscles, which are the Rotators of the Thigh, when it is in a line with the Body, become its Abductors when it is in the bended state.

TENSOR VAGINÆ FEMORIS.

Origin : By a narrow, Tendinous, and Flefhy beginning, from the external part of the anterior superior Spinous Procefs of the Os Ilium. It goes downwards and a little backwards, forming a thick Flefhy Belly, which is inclofed in a doubling of the Aponeurofis or Vagina of the Thigh.

Infertion : A little below the Trochanter Major, into the inner Surface of the Aponeurofis which covers the outside of the Thigh.

Action : To stretch the Aponeurofis, and to affist in the Abduction of the Thigh, and in its rotation inwards.

SARTORIUS.

Origin : Tendinous, from the superior anterior Spinous Procefs of the Os Ilium. It soon becomes Flefhy, runs obliquely downwards over the Muscles fituated upon the fore and inner fide of the Thigh, and is the longest Muscle of the Body.

Infertion : By a broad and thin Tendon, into the inner fide of the Tibia, near the inferior part of its Tubercle.

Action : To move the Knee, and bring one Leg obliquely inwards acrofs the other.

GRACILIS, or *Reclus Internus*.

Origin : By a thin Tendon, from the Os Pubis, near
the

the Symphysis. It soon becomes Fleſhy, and deſcends in a direct courſe by the inſide of the Thigh.

Inſertion : Tendinous, into the Tibia, under the Sartorius.

Action : To aſſiſt the Sartorius, in making the full Flexion of the Knee, after it has been bent to a certain degree by the Flexors on the back-part of the Thigh.

RECTUS FEMORIS, or *Gracilis Anterior*.

Origin : Fleſhy from the inferior anterior Spinous Proceſs of the Os Ilium ; and Tendinous, from the Dorſum of the Ilium, a little above the Acetabulum. It runs down over the anterior part of the Cervix of the Os Femoris, and, in its paſſage along the fore-part of the Thigh, becomes gradually larger as far down as its middle, after which it decreases towards its lower extremity. In the middle of the Muſcle, there is a longitudinal Tendinous Line, from which the Muſcular Fibres run off like the Plumage of a Feather, the Tendon itſelf being moſt conſpicuous behind.

Inſertion : Tendinous, into the upper part of the Patella.

Action : To extend the Leg.

CRURALIS, or *Crureus*.

Origin : Fleſhy, from between the two Trochanters of the Os Femoris, but neareſt the Minor ; and from the fore-part of the Thigh-Bone, to near its under extremity. Its ſides are connected to both Vaſti Muſcles, and, below, it ſends off a Tendon which joins that of the former Muſcle.

Inſertion :

Insertion : Into the upper and back part of the Patella, behind the Rectus.

Action : To assist in the extension of the Leg.

VASTUS EXTERNUS.

Origin : Broad, Tendinous, and Flethy, from the outer part of the Root of the Trochanter Major. Its Origin is continued from the Trochanter, along the whole outer side of the Linea Aspera, to near the external Condyle of the Os Femoris, by Flethy Fibres, which run obliquely forwards to a middle Tendon, where they terminate.

Insertion : Into the upper and outer part of the Patella, at the edge of the Tendon of the Rectus, with which it is connected. Part of it ends in an Aponeurosis, which is continued to the Leg, and, in its passage, is fixed to the Head of the Tibia.

Action : To extend the Leg.

VASTUS INTERNUS.

Origin : Tendinous and Flethy, from the fore-part of the Os Femoris, and root of the Trochanter Minor. The Origin is also continued along the whole inside of the Linea Aspera, by Fibres running obliquely forwards and downwards.

Insertion : Tendinous, at the side of the Crureus with which it is connected, into the upper and inner edge of the Patella, continuing Flethy lower than the Vastus Externus. Part of it likewise ends in an Aponeurosis, which is extended down to the Leg, and is fixed, in its passage, to the upper part of the Tibia.

Action :

Action : To assist the three former Muscles in extending the Leg ; in doing which, the Patella, fixed to the Tubercle of the Tibia by a strong Ligament, supplies the office of a Pulley.

SEMITENDINOSUS.

Origin : Tendinous and Flethy, in common with the long Head of the Biceps, from the posterior part of the Tuberosity of the Os Ischium. Its Flethy Belly runs down the back-part of the Thigh, and sends off a long roundish Tendon, which, passing along the inner side of the Knee, ends flat, and has its

Insertion into the inside of the Ridge of the Tibia, a little below its Tubercle, and connected to the under edge of the Gracilis.

Action : To bend the Leg, and, when bended, to roll it inwards.

SEMIMEMBRANOSUS.

Origin : By a broad flat Tendon, from the upper and posterior part of the Tuberosity of the Os Ischium. The Fibres composing the Flethy Belly, run in a very oblique direction towards a Tendon at the inner and under part of the Muscle, which is situated behind the Semitendinosus.

Insertion : Into the inner and back part of the Head of the Tibia.

Action : To bend the Leg, and bring it directly backwards.

BICEPS FLEXOR CRURIS.

Origin : By two distinct Heads. The first, or *Long Head*, arises in common with the Semitendinosus, from the upper and back part of the Tuberosity of the Os Isthium. The second, or *Short Head*, arises from the Linea Aspera, a little below the termination of the Gluteus Maximus, by a fleshy acute beginning, which soon grows broader, as it descends to join the first Head a little above the external Condyle of the Os Femoris.

Insertion : By a strong Tendon, into the upper part of the Head of the Fibula.

Action : To bend the Leg.

The Semitendinosus and Semimembranosus form the *inner Ham-string*, and the Biceps the *outer Ham-string*, between which the great Vessels and Nerves are situated, which run to the Leg.

POPLITEUS.

Origin : By a small round Tendon, from the outer and under part of the external Condyle of the Os Femoris, and from the back-part of the Capsular Ligament of the Joint. In passing the Joint, it becomes fleshy, and spreads out, the Fibres running obliquely inwards and downwards covered with a Tendinous Membrane.

Insertion : Thin and fleshy, into a Ridge at the upper and inner edge of the Tibia, a little below its Head.

Action : To assist in bending the Leg, and, when bent, to roll it inwards. The Muscle also prevents the Capsular Ligament from being pinched.

MUSCLES SITUATED ON THE LEG AND FOOT, SERVING
FOR THE MOTIONS OF THE FOOT AND TOES.

GASTROCNEMIUS EXTERNUS, or *Gemellus*.

Origin : By two distinct Heads ; one from the upper and back part of the internal Condyle of the Os Femoris, and from a little above the Condyle, by two separate beginnings. The other Head arises, Tendinous, from the upper and back part of the external Condyle. A little below the Joint, their Flešhy Bellies meet in a middle Tendon, the union giving the appearance of a longitudinal Raphe. Below the middle of the Tibia, the Muscle sends off a broad thin Tendon, which, becoming gradually narrower, joins that of the Gastrocnemius Internus, a little above the Ankle.

GASTROCNEMIUS INTERNUS, or *Soleus*.

Origin : By two Heads. The first from the back-part of the Head and upper and back part of the Body of the Fibula. The other from the back part of the Tibia, running inwards along the under edge of the Popliteus, towards the inner part of the Bone, from which it receives Flešhy Fibres for some way down. The Flešh of this Muscle, covered by the Tendon of the Gastrocnemius Externus, descends nearly as far as the extremity of the Tibia, a little above which the Tendons

dons of both *Gastrocnemii* unite, and form a strong round Chord, called *Tendo Achillis*.

Insertion : Into the upper and back part of the *Os Calcis*, by the projection of which the *Tendo Achillis* is at a considerable distance from the *Tibia*.

Action : To extend the Foot, by raising the Heel.

PLANTARIS.

Origin : Thin and Flethy, from the upper and back part of the external Condyle of the *Os Femoris*, and from the Capsular Ligament of the Joint. A little below the Head of the *Fibula*, it sends off a long slender Tendon, which descends obliquely inwards, between the inner Heads of the *Gastrocnemii* Muscles, and afterwards runs along the inner edge of the *Tendo-Achillis*.

Insertion : Into the inside of the posterior part of the *Os Calcis*, below the *Tendo Achillis*.

Action : To assist the *Gastrocnemii*, and to pull the Capsular Ligament of the Knee from between the Bones.

This Muscle is sometimes, though seldom, wanting.

TIBIALIS ANTIQUS.

Origin : Tendinous, from the upper part of the *Tibia*, between its Tubercle and articulation with the *Fibula*. It then runs down, Flethy, on the outside of the *Tibia*, adhering to it and to the upper part of the Interosseous Ligament. Towards the under part of the Leg, it sends off a strong round Tendon, which passes under the *Ligamentum Tarsi Annulare*, near the inner Ankle.

Inſertion : Tendinous, into the middle of the Os Cuneiforme Internum, and Baſe of the Metatarſal Bone of the Great Toe.

Action : To bend the Foot, by bringing the fore-part of it towards the Leg.

TIBIALIS POSTICUS.

Origin : Fleſhy, from the upper and fore-part of the Tibia, under the Proceſs which joins it to the Fibula. Then, paſſing through a Fiſſure in the upper part of the Interofſeous Ligament, it continues its Origin from the back-part of the Fibula, next the Tibia, and from near one half of the upper part of the laſt-named Bone, as alſo from the Interofſeous Ligament; the Fibres running towards a middle Tendon, which, in its deſcent, becomes round, and paſſes in a Groove behind the Malleolus Internus.

Inſertion : Tendinous, chiefly into the upper and inner part of the Os Naviculare, and partly into the under Surface of the Tarſal Bones by ſeparate Slips, the laſt of which goes to the root of the Metatarſal Bone of the Middle Toe.

Action : To extend the Foot, and, with the aſſiſtance of the Tibialis Anticus, to turn the Toes inwards, and the outer edge of the Foot downwards.

PERONEUS

PERONEUS LONGUS, or *Primus*.

Origin : Tendinous and Flefhy, from the fore-part of the Head of the Fibula ; and Flefhy, from the outer part of the Bone, down to within a hand-breadth of the Ankle. The Fibres run in a Penniform manner towards a long Tendon, which becomes round, and, inclofed in a Sheath, paffes through a Channel, behind the Malleolus Externus. It is then reflected to the Sinuofity of the Os Calcis, runs along a Groove in the Os Cuboides, and goes obliquely acrofs the Bones in the middle of the Sole.

Infertion : Tendinous, into the outside of the root of the Metatarfal Bone of the Great Toe, and partly into the Os Cuneiforme Internum.

Action : To extend the Foot a little, to draw it outwards, and to turn the inner edge of it downwards.

PERONEUS BREVIS, or *Secundus*.

Origin : Flefhy, from the outer part of the Fibula, beginning fome way above the middle height of the Bone, and continuing its adhefion as far as the Malleolus Externus. The Fibres run, like thofe of the former Mufcle, to an external Tendon, which becomes round, paffes behind the outer Ankle, where it is included in the fame Sheath with the Tendon of the preceding Mufcle, and there, crossing behind that Tendon, runs forwards in a Sheath proper to itfelf.

Infertion : Tendinous into the root and external part of the Metatarfal Bone of the Little Toe.

Action : To assist the former Muscle in pulling the Foot outwards, and its outer edge upwards, and also to extend it in a small degree.

EXTENSOR LONGUS DIGITORUM PEDIS.

Origin : Tendinous and Fleshy, from the upper and outer part of the Head of the Tibia, and from the Head and almost the whole length of the anterior Spine of the Fibula. It arises, also, Fleshy, from the Aponeurosis which covers the upper and outer part of the Leg, and from the Interosseous Ligament. Under the Ligamentum Tarfi Annulare, it splits into four round Tendons, which pass along the upper part of the Foot.

Insertion : Into the Base of the first Phalanx of the four small Toes, by flat Tendons which are expanded over the upper side of the Toes as far as the root of the last Phalanx.

Action : To extend all the Joints of the four small Toes.

A portion of this Muscle is called, by ALBINUS,

PERONEUS TERTIUS.

Origin : From the middle of the Fibula, in common with the Extensor Longus Digitorum. It continues down to near the Malleolus Externus, and sends its Fleshy Fibres forwards to a Tendon which passes under the Annular Ligament.

Insertion : Into the root of the Metatarsal Bone of the Little Toe.

Action : To assist in bending the Foot.

EXTENSOR

EXTENSOR BREVIS DIGITORUM.

Origin : Flefhy and Tendinous, from the outer and fore part of the Os Calcis. It soon forms a Flefhy Belly, which is divided into four Portions. Thefe tend off an equal number of Tendons, which pafs over the upper part of the Foot, croffing under thofe of the former Mufcle.

Infertion : By four flender Tendons, into the Tendinous Expansion continued from the long Extensors of all the Toes, excepting the little one.

Action : To affift in the extenfion of the Toes.

APONEUROSIS PLANTARIS.

This, like the Aponeurofis Palmaris, is a ftrong Tendinous Expansion, which covers the Mufcles, Veffels, and Nerves of the Sole.

It arifes from the Tuberosity at the under and back part of the Os Calcis, and is divided into three Portions, which run forwards to be connected to the Heads of the Metatarfal Bones of all the Toes. The middle Portion is fubdivided into five Slips, which fplit at the roots of the Toes, and embrace the Tendons of the Flexor Mufcles.

Befides ferving the general purpofe of Aponeurofes, it performs the office of a Ligament, by binding the two ends of the Arch of the Foot together.

FLEXOR BREVIS DIGITORUM PEDIS,

Or *Flexor Sublimis*, or *Perforatus*.

Origin : Narrow and Flethy, from the inferior anterior part of the Tuberosity of the Os Calcis, and from the Aponeurosis Plantaris. It forms a thick Flethy Belly, which sends off four small Tendons, and these split for the passage of the Tendons of the Flexor Longus.

Insertion : Into the second Phalanx of the four small Toes.

Action : To bend the first and second Joints of the Toes, but particularly the second.

The Tendon of the Little Toe is frequently wanting.

FLEXOR LONGUS DIGITORUM,

Or *Flexor Profundus*, or *Perforans*.

Origin : By an acute Tendon, which soon becomes Flethy, from the back-part of the Tibia, at the under edge of the Popliteus; and this beginning is continued down the inner edge of the Bone, by short Flethy Fibres ending in its Tendon. It arises also by Tendinous and Flethy Fibres, from the outer edge of the Tibia; and between this double order of Fibres the Tibialis Posticus lies inclosed. Having gone under two Annular Ligaments, it passes through a Sinuosity at the inside of the Os Calcis; and about the middle of the Sole, receives a Tendon from the Flexor Longus Pollicis. It then divides into four Tendons which run through the Slits of the Perforatus.

Insertion.

Insertion : Into the Base of the third Phalanx of the four smaller Toes, the Tendons of this, as well as of the Flexor Brevis, being inclosed upon the Toes by Annular Ligaments.

Action : To bend the different Joints of the Toes, but especially the last one.

FLEXOR DIGITORUM ACCESSORIUS,

Or *Massa Carneae Jacobi Sylvii*.

Origin : By two Portions ; the inner Fleehy, from the Sinuosity of the Os Calcis ; the outer Tendinous, but soon becoming Fleehy, from the fore and outer part of that Bone.

Insertion : Into the Tendon of the Flexor Longus Digitorum, before it divides into smaller Tendons.

Action : To assist the Flexor Longus.

LUMBRICALES.

Origin : By four Tendinous and Fleehy beginnings, from the Tendon of the Flexor Profundus, just before its division. They run forwards, under the same general appearance with those in the Hand, but are somewhat smaller.

Insertion : By four slender Tendons, at the inside of the first Joint of the four small Toes, into the Tendinous Expansion sent from the Extensors to cover the upper part of the Toes.

Action : To increase the Flexion of the Toes, and to draw them inwards.

EXTENSOR

EXTENSOR PROPRIUS POLLICIS PEDIS,

Or *Extensor Longus*.

Origin : By an acute, Tendinous, and Fleshy beginning, from the fore-part of the Fibula, some way below its Head. It continues its Origin from the same Bone to near the outer Ankle, by Fleshy Fibres, which descend obliquely towards a Tendon.

Insertion : Tendinous, into the posterior part of both the bones of the Great Toe.

Action : To extend the Great Toe.

FLEXOR LONGUS POLLICIS.

Origin : Tendinous and Fleshy, from the back-part of the Fibula, some way below its Head, being continued down the same Bone, almost to its under end, by a double order of oblique Fleshy Fibres. Its Tendon passes under an Annular Ligament at the inner Ankle.

Insertion : Into the last Joint of the Great Toe.

Action : To bend the Great Toe, and particularly the last Joint.

FLEXOR BREVIS POLLICIS.

Origin : Tendinous, from the under and fore part of the Os Calcis, and from the Os Cuneiforme Externum. It is inseparably united with the Abductor and Adductor Pollicis.

Insertion : Into the external Os Sefamoideum, and root of the first Bone of the Great Toe.

Action : To bend the first Joint of the Great Toe.

ABDUCTOR

ABDUCTOR POLLICIS.

Origin: Flefhy, from the anterior and inner part of the Protuberance of the Os Calcis, and Tendinous from the fame Bone, where it joins with the Os Naviculare.

Infertion: Tendinous, into the internal Os Sefamoideum, and root of the firft Bone of the Great Toe.

Action: To pull the Great Toe from the reft.

ADDUCTOR POLLICIS.

Origin: By a long thin Tendon, from the under part of the Os Calcis; from the Os Cuboides; from the Os Cuneiforme' Externum; and from the root of the Metatarfal Bone of the fecond Toe. The Mufcle is divided into two Flefhy Portions, which unite, and have their

Infertion into the external Os Sefamoideum, and root of the Metatarfal Bone of the Great Toe.

Action: To pull the Great Toe towards the reft.

ABDUCTOR MINIMI DIGITI PEDIS.

Origin: Tendinous and Flefhy, from the edge of a Cavity on the under part of the Protuberance of the Os Calcis, and from the root of the Metatarfal Bone of the Little Toe.

Infertion: Into the outer part of the root of the firft Bone of the Little Toe.

Action: To draw the Little Toe outwards.

FLEXOR BREVIS MINIMI DIGITI.

Origin: Tendinous, from the Os Cuboides, near the
Groove

Groove for lodging the Tendon of the Peroneus Longus ; and Flefhy, from the outer and back part of the Metatarfal Bone of this Toe.

Infertion : Into the anterior extremity of the Metatarfal Bone, and root of the firft Bone of the Little Toe.

Action : To bend this Toe.

TRANSVERSALIS PEDIS.

Origin : Tendinous, from the under and fore part of the Metatarfal Bone of the Great Toe, and from the internal Os Sefamoideum of the firft Joint. It forms a Flefhy Belly, which runs tranfverfely between the Metatarfal Bones and Flexor Mufcles of the Toes, and has its

Infertion, Tendinous, into the under and outer part of the anterior extremity of the Metatarfal Bone of the Little Toe, and Ligament of the next Toe.

Action : To contract the Foot, by bringing the roots of the outer and inner Toes towards each other.

INTEROSSEI PEDIS.

The Interoflei arife, Tendinous and Flefhy, from, and fill the fpaces between, the Metatarfal Bones. Three, called *Interni*, arife with fingle Heads, and are placed in the Sole ; and four, termed *Externi*, or *Bicipites*, arife with double Heads, and appear on both fides of the Foot.

The Infertion of all the Interoflei is by flender Tendons,
into

into the Expansion sent off from the Tendons of the Lumbricales and of the Extensor Muscles of the Toes.

INTEROSSEI INTERNI.

PRIOR, OR ABDUCTOR MEDII DIGITI.

Origin : From the inside of the Metatarsal Bone of the Middle Toe.

Insertion : Into the inside of the root of the first Bone of the Middle Toe.

Action : To pull the middle Toe inwards.

PRIOR, OR ABDUCTOR TERTII DIGITI.

Origin : From the inner and under part of the Metatarsal Bone of the Third of the small Toes.

Insertion : Into the inside of the root of the first Bone of the Third Toe.

Action : To pull the Third Toe inwards.

PRIOR, OR ADDUCTOR MINIMI DIGITI.

Origin : From the inside of the Metatarsal Bone of the Little Toe.

Insertion : Into the inside of the root of the first Bone of the Little Toe.

Action : To pull the Little Toe inwards.

INTER-

INTEROSSEI EXTERNI, or Bicipites.

PRIOR, or ABDUCTOR INDICIS.

Origin : From the contiguous sides of the Metatarsal Bones of the Great and Fore Toes.

Insertion : Into the inside of the root of the first Bone of the Fore-Toe.

Action : To pull the Fore-Toe inwards.

POSTERIOR, or ADDUCTOR INDICIS.

Origin : From the contiguous sides of the Fore Toe and Second of the small Toes.

Insertion : Into the outside of the root of the first Bone of the Fore-Toe.

Action : To pull the Fore-Toe outwards.

POSTERIOR, or ADDUCTOR MEDII DIGITI.

Origin : From the contiguous sides of the Metatarsal Bones of the Second and Third of the small Toes.

Insertion : Into the outside of the root of the first Bone of the Second of the small Toes.

Action : To pull this Toe outwards.

POSTERIOR, or ADDUCTOR TERTII DIGITI.

Origin : From the contiguous sides of the Metatarsal Bones of the Third and Fourth of the small Toes.

Insertion : Into the outside of the root of the first Bone of the Third of the small Toes.

Action : To pull this Toe outwards.

END OF PART SECOND.

PART

PART III.
OF THE
BURSÆ MUCOSÆ,
OF THE
STRUCTURE OF THE BONES.
OF THE
LIGAMENTS
AND
OTHER PARTS OF THE JOINTS.



OF THE

BURSÆ MUCOSÆ.

THE BURSÆ MUCOSÆ are peculiar to the Extremities, and are found between Tendons and Bones, where they play upon each other; as at the Infertion of the Biceps Flexor Cubiti :

Or, completely furrounding the Tendons, as around the Tendons of the Flexors on the Fingers and Toes;

Or, where Tendons rub on each other; as between those of the Extensores Carpi Radiales, and Extensores Pollicis :

Or, between Tendons and External Parts; as over the Tendons of the Flexors of the Fingers, in the Palm of the Hand :

Or, between Tendons and Ligaments of the Joints; as between the Tendons of the Flexors of the Fingers, and Capsular Ligament of the Wrist.

They are found in a few places, where Processes play upon Ligaments; as between the Acromion and Capsular Ligament of the Humerus :

Or, where Bones play on each other; as between the Clavicle and Coracoid Process of the Scapula.

Some of the Bursæ of contiguous Tendons communicate with each other; as between the Extensor Carpi Radialis, and Extensor Secundi Internodii Pollicis.

Others communicate, not only in Adults, but often also in Children, with the Cavity of the Joints; as behind the Tendon of the Extensors of the Leg; though this is more frequently the case in advanced age.

Their Structure is the same with the inner Layer of the Capsule & Ligament of the Joints.

Like that, they are formed of a thin pellucid Membrane, possessing little Sensibility, and joined to the surrounding parts by Cellular Substance, which, in many places, is intermixed with Fat.

Like the Capsule of the Joint, they have commonly a thin Layer of Cartilage, or of tough Membrane, between them and the Bone.

Like it too, they have reddish coloured Masses of Fat projecting into their Cavities, from the edges of which Fringes are sent off; as behind the Ligament of the Patella, or at the Insertion of the Tendo Achillis.

Like it also, the inside of the Bursæ is remarkably smooth, being lubricated with the same kind of Gelatinous Mucus which is found in the Cavities of the Joints; —the Mucus serving the same general purpose with that of the Joints, viz. to lessen Friction, and prevent the consequences which would otherwise result from it.

BURSÆ

BURSÆ MUCOSÆ

OF

THE SUPERIOR EXTREMITY.

BURSÆ about the JOINT of the SHOULDER.

A BURSA under the Clavicle, where it plays upon the Coracoid Process of the Scapula.

A large Bursa between the Acromion and Ligament, joining it to the Coracoid Process and the Capsular Ligament of the Humerus.

A small Bursa, sometimes absent, between the point of the Coracoid Process and Capsular Ligament of the Humerus.

A Bursa between the Tendon of the Subscapularis Muscle and Capsular Ligament of the Joint of the Humerus, frequently communicating with the Cavity of the Joint.

A Bursa, not constant, between the Origin of the Coraco-Brachialis and short Head of the Biceps Muscle, and Capsular Ligament of the Humerus.

A Bursa between the Tendon of the Teres Major and the Os Humeri, and upper part of the Tendon of the Latissimus Dorsi.

A small Bursa between the Tendon of the Latissimus Dorsi and Os Humeri.

A Bursa between the Tendon of the long Head of the Biceps Flexor Cubiti and Body of the Humerus.

BURSÆ *about the JOINT of the ELBOW.*

A Bursa, with a *Peloton* of Fat, between the Tendon of the Biceps and Tubercle of the Radius.

A small Bursa between the Tendon common to the Extensor Carpi Radialis Brevior, Extensor Digitorum Communis, and Round Head of the Radius.

A small Bursa between the Tendon of the Triceps Extensor Cubiti and Olecranon.

BURSÆ *upon the Under Part of the FORE-ARM and HAND.*

A very large Bursa surrounding the Tendon of the Flexor Pollicis Longus.

Four long Bursæ lining the Sheaths which inclose the Tendons of the Flexors upon the Fingers.

Four short Bursæ on the fore-part of the Tendons of the Flexor Digitorum Sublimis in the Palm of the Hand.

A large Bursa between the Tendon of the Flexor Pollicis Longus, the fore-part of the Radius, and Capsular Ligament of the Wrist and Os Trapezium.

A large Bursa between the Tendons of the Flexor Digitorum Profundus, and the fore-part of the end of the Radius and Capsular Ligament of the Wrist.

These

These two last-mentioned Bursæ are sometimes found to communicate with each other.

A Bursa between the Tendon of the Flexor Carpi Radialis and Os Trapezium.

A Bursa between the Tendon of the Flexor Carpi Ulnaris and Os Pisiforme.

A Bursa between the Tendon of the Extensor Ossis Metacarpi Pollicis and Radius.

A large Bursa common to the Extensores Carpi Radiales, where they cross behind the Extensor Ossis Metacarpi Pollicis.

Another Bursa common to the Extensores Carpi Radiales, where they cross behind the Extensor Secundi Internodii Pollicis.

A third Bursa at the Insertion of the Tendon of the Extensor Carpi Radialis Brevior.

A Bursa for the Tendon of the Extensor Secundi Internodii Pollicis, which communicates with the second Bursa common to the Extensores Carpi Radiales.

Another Bursa between the Tendon of the Extensor Secundi Internodii Pollicis and Metacarpal Bone of the Thumb.

A Bursa between the Tendons of the Extensor of the Fore, Middle, and Ring Fingers, and Ligament of the Wrist.

A Bursa for the Tendons of the Extensor of the Little Finger.

A Bursa between the Tendon of the Extensor Carpi Ulnaris and Ligament of the Wrist.

BURSÆ MUCOSÆ

OF

THE INFERIOR EXTREMITY.

BURSÆ upon the PELVIS and Upper Part of the THIGH.

A VERY large Bursa between the Iliacus Internus, and Psoas Magnus Muscle, and Capsular Ligament of the Thigh-Bone.

A Bursa between the Tendon of the Pectinalis Muscle and Thigh-Bone.

A small Bursa between the Gluteus Medius and Trochanter Major, and before the Insertion of the Tendon of the Piriformis.

A Bursa between the Tendon of the Gluteus Minimus and Trochanter Major.

A Bursa between the Gluteus Maximus and Vastus Externus.

A Bursa between the Gluteus Medius and Piriformis.

A Bursa between the Obturator Internus and Os Ischium.

An oblong Bursa continued a considerable way between the
the

the Obturator Internus and Gemini, and Capsular Ligament of the Thigh-Bone.

A small Bursa at the Head of the Semimembranosus and Biceps Flexor Cruris.

A small Bursa between the Origin of the Semitendinosus and that of the two former Muscles.

A large Bursa between the Tendon of the Gluteus Maximus and root of the Trochanter Major.

Two small Bursæ between the Tendon of the Gluteus Maximus and Thigh-Bone.

BURSÆ about the JOINT of the KNEE.

A large Bursa behind the Tendon of the Extensors of the Leg, frequently found to communicate with the Cavity of the Knee-joint.

A Bursa behind the Ligament which joins the Patella to the Tibia, in the upper part of the Cavity of which a fatty Substance projects.

A large Bursa between the Tendons of the Sartorius, Gracilis, Semitendinosus, and Tibia.

A Bursa between the Tendons of the Semimembranosus and Gastrocnemius Externus, and Ligament of the Knee. This Bursa contains a small one within it, from which there is a passage leading into the Cavity of the Joint of the Knee.

A Bursa between the Tendon of the Semimembranosus and the internal lateral Ligament of the Knee, from which also there is a Passage leading into the Joint.

A Bursa under the Popliteus Muscle, likewise communicating with the Cavity of the Knee-Joint.

BURSÆ *about the ANKLE.*

A Bursa between the Tendon of the Tibialis Anticus and under part of the Tibia and Ligament of the Ankle.

A Bursa between the Tendon of the Extensor Proprius Pollicis Pedis and the Tibia and Capsular Ligament of the Ankle.

A Bursa between the Tendons of the Extensor Digitorum Longus and Ligament of the Ankle.

A large Bursa common to the Tendons of the Peronei Muscles.

A Bursa proper to the Tendon of the Peroneus Brevis.

A Bursa between the Tendo Achillis and Os Calcis, into the cavity of which a *Peloton* or Mass of Fat projects.

A Bursa between the Os Calcis and Flexor Pollicis Longus.

A Bursa between the Flexor Digitorum Longus and the Tibia and Os Calcis.

A Bursa between the Tendon of the Tibialis Posticus and the Tibia and Astragalus.

BURSÆ MUCOSÆ *in the Sole of the Foot.*

A second Bursa for the Tendon of the Peroneus Longus, with an oblong *Peloton* of Fat within it.

A Bursa common to the Tendon of the Flexor Pollicis Longus, and that of the Flexor Digitorum Profundus, at the upper end of which a fatty Substance projects.

A Bursa for the Tendon of the Tibialis Posticus.

A Bursa lining the Sheaths of each of the Tendons of the Flexors upon the Toes.

OF THE
S T R U C T U R E
OF
THE BONES.

THE Bones derive their *Hardness* from the great quantity of *Earth* contained in their substance.

They are more or less of a *white* or *red* colour, according to the proportions of *Earth* or *Blood* entering their composition; and are therefore whitest in the Adult, and reddest in the Child, more *Earth* being found in the former, and more *Blood* in the latter.

Bones are composed of *Lamellæ*, or *Plates*, which are formed of *Fibres* running longitudinally, or in a radiated manner, according to the natural figure of the Bone; as may be seen by exposing them to the heat, or to the weather, &c.

The *Plates* of Bones are originally formed by the Vessels of the *Periosteum Externum*, and *Membrana Medullaris*, and not, as has been supposed by some Authors, from Layers detached from the external *Periosteum*.

The *Plates* are connected by *Fibres*, which some have considered

considered as *Claviculi* or *Nails*, and called *Perpendicular*, *Oblique*, &c. according to their different directions.

The *outer Plates* of Bones are firmly compacted, so as to appear like one solid substance.

The *inner Parts* of Bones in general, whether long, round, or flat, have their Plates and Threads running in various directions, intersecting each other, and forming the *Cancelli*, or *Spongy Substance* of the Bones; the *Cancelli* every where communicating freely with each other.

The *Cancelli*, in the middle of long Bones, are Fibrous, and form the *Reticular Substance* which divides the Bone into large caverns.

8 Towards the extremities, the *Cancelli* are lamellated, and much more numerous than in the middle of long Bones.

Cancelli, of a similar nature to those of the long Bones, are also placed between the Tables of flat, and inner parts of round Bones.

In some of the broad Bones, however, the solid parts are so much compressed, as to leave little or no room for *Cancelli*.

On the contrary, in the middle of the long Bones, the *Cavities* are so large as to give to each Bone the appearance of a *hollow Cylinder*.

The *Cancelli* of Bones are formed by the internal Plates passing inwards and decussating each other; and in the long Bones, the sides of the Bone become gradually thinner towards its extremities, while the *Cancelli* in proportion become more numerous.

The *Cancelli* exist even in the most solid parts of Bones,

as can be readily seen by exposure to heat, or in Bones enlarged by disease. In either of these cases, small Cavens may be observed, and are distinguishable from the Canals for containing the Vessels, the former being irregular, and the latter cylindrical.

The Cancelli support the Membranes containing the Marrow, as the Cellular Substance does the Fat. They also furnish a wider surface for the dispersion of the Arteries which secrete the Marrow.

Upon the *surface* of Bones there are numerous *Fissures*, for the more intimate connection of the Periosteum with the Bone, and for lodgement to Blood-vessels.

Many *Orifices* are observed upon the surface, and particularly in the Furrows of Bones, for the transmission of Blood-vessels into their substance.

Near the middle of most of the Bones, especially the long ones, there is a slanting *Canal* for the passage of the principal Medullary Vessels.

Numerous *Orifices* are observed at the *extremities* of *long Bones*, also serving some of them, for the transmission of Blood-vessels, and others for giving attachment to the Fibres of the Ligaments of the Joints.

The principal Vessels pass into the Cancelli, internal Membranes, and Marrow, and return to the solid Substance of the Bone, where they meet those sent inwards from the Periosteum.

In some *flat Bones*, as those of the *Cranium*, the Bones are entirely supplied from the Vessels of the surrounding Membranes, and the Vascularity there is uniform.

Bones, like other parts, have their *Lymphatics*, as appears

pears by the absorption of Matter found deposited in the Substance of the Bones of Animals which receive it with their food; by the absorption of part of the Bone itself, when in the diseased state; and even by Injection.

The *Nerves* of the Bones are small, but may be observed in certain parts of the Bones, and, it is presumed, exist in all.

From the minuteness of the Nerves, Bones are not *sensible* in the sound state; and even in the diseased, the pain felt may be owing to the Membranes within them.

The general *Use* of Bones is,—to furnish attachment to the Muscles, and lodgement, protection, and support to the Bowels.

PERIOSTEUM.

The *Periosteum* derives its name from its furnishing a general Covering to the Bones.

In certain parts, however, it is *perforated* by Muscles, Ligaments, or Cartilages, which are fixed immediately to the surface of the Bones; and at the Joints it separates from the Bones, to give a Covering to the Capsular Ligaments.

It is *formed* of many Fibres, which, in certain parts, can be divided into Layers.

The *outer Surface* of this Membrane is connected to the surrounding parts by Cellular Substance.

The *inner Surface* is more uniform than the outer, and its Fibres run, most frequently, in the same direction with those of the subjacent Bone.

The *inner part* of the Periosteum is connected to the surface

surface of the Bones by Blood-vessels and Ligamentous Fibres; and this Connection is much stronger in the Child than in the Adult.

The Periosteum, as well as other Membranes, must be supplied with *Nerves*;—but these are too minute to be readily traced.

The *Sensibility* of the Periosteum, like that of other Membranes, is by no means acute, though found to possess a certain degree of it.

The *principal Uses* of this Membrane are,—to transmit the Vessels which are spread out upon its surface into the Substance of the Bones;—to give attachment to Muscles;—to prevent the effects of Friction between them and the Bones;—to assist in binding the latter together, &c.

MEMBRANA MEDULLARIS,

Improperly called PERIOSTEUM INTERNUM.

It is divided into numberless small parts which line the inner side of the Bones and all the Cancelli, and affords a large surface for the dispersion of the Secretory Vessels of the Marrow, which it incloses.

MARROW.

The *Marrow* may be considered as an *Appendage* of the general Corpus Adiposum, and is deposited in the Cavities of the Bones, at the same time that the rest of the Body is supplied with Fat.

Like the Fat, when viewed in a Microscope, it resembles a cluster of Pearls;—or it is contained in Spherical Sacs upon which Vessels are minutely dispersed,
but

but from which no Excretory Ducts have yet been discovered.

It possesses little *Sensibility*; and what it does possess is considered by the latest authors as belonging rather to its Membranes than to the Marrow itself.

CARTILAGES.

Cartilages are of a *white Colour* and *elastic Substance*, and much *softer* than Bones, in consequence of the smaller quantity of *Earth* entering their composition.

Their *Structure* is not so evidently Fibrous as that of Bones, yet, by long Maceration, or by tearing them asunder, a Fibrous disposition is perceptible.

Their *Vessels* are extremely small, though they can be readily injected in Cartilages where Bone is beginning to form. The Vessels of the Cartilages of the Joints, however, seem entirely to exclude the red blood; no Anatomist having yet been able to inject them. They have no *Cancelli*, nor internal Membranes, for lodging Marrow; no Nerves can be traced to them; nor do they possess any Sensibility in the sound state.

Upon their Surface, there is a thin Membrane termed *Perichondrium*, which in Cartilages supplying the place of Bone, as in those of the Ribs, or at the ends of the long Bones in Children, is a continuation of the *Periosteum*, and serves the same general purposes to Cartilage as this does to Bone.

Upon the surface of Articular Cartilages, the Perichondrium is a *Reflection* of the inner Surface of the Capsular Ligament,

Ligament, and is so very thin, and adheres so closely, as to appear like part of the Cartilage itself.

One set of Cartilages supply the place of Bone ;—or by their flexibility, admit of a certain degree of motion, while their elasticity recovers their natural position ;—as in the *Nose, Larynx, Cartilages of the Ribs, &c.*

Another set, in Children, supply the place of Bone, until Bone can be formed, and afford a Nidus for the Osseous Fibres to shoot in ;—as in the *long Bones of Children.*

A third set, and that the most extensive, by the smoothness and slipperiness of their surface, allow the Bones to move readily, without any abrasion ;—as in the *Cartilages of the Joints.*

A fourth set supply the office both of Cartilage and Ligament, giving the elasticity of the former and flexibility of the latter ;—as in the *Cartilages of the Bones of the Spine and Pelvis.*

OF THE FORMATION OF BONE.

The generality of Bones, and particularly the *long Bones*, are originally formed in Cartilage ; some, as those of the *Skull*, are formed between Membranes ; and the *Teeth* in distinct Bags.

When Ossification is about to begin in a particular part of a Cartilage,—most frequently in the Centre,—the Arteries, which were formerly transparent, become dilated, and receive the red blood from which the Osseous matter is secreted. This Matter retains, for some time, the form of the Vessels which give it origin, till more Arteries be-
ing

ing by degrees dilated, and more Osseous matter deposited, the Bone at length attains its complete form.

During the progress of Ossification, the surrounding Cartilage by degrees disappears, not by being changed into Bone, but by an absorption of its parts, the new-formed Bone occupying its place.

The Ossification of *broad Bones*, as those of the *Head*, begins by one or more *Points*, from which the Osseous Fibres issue in rays.

The Ossification of *long Bones*, as in those of the Extremities, begins by *central Rings*, from which the Fibres extend towards the ends of the Bones.

The Ossification of *Spherical-shaped Bones* begins by one *Nucleus*, as in the *Wrist*; and that of *irregular-shaped Bones*, by different *Nuclei*, as in the *Vertebrae*.

Some Bones are completely formed at the time of Birth, as the *small Bones of the Ear*.

The generality of Bones are *incomplete* until the age of puberty, or between the fifteenth and twentieth year, and in some few instances not until a later period.

In Children, the greater number of parts in Bones are *Epiphyses* or *Appendices*, which, in Adults, become *Processes*.

The *Epiphyses* begin to appear after the Body of the Bone is ossified, and are themselves ossified at seven or eight years of age, though their external surface is still somewhat Cartilaginous.

In the early period of life, the Body and Ends of long Bones make *three distinct parts*, which can readily be separated by boiling, or by maceration in water.

The

The Epiphyses are joined to the Body of the Bone by Cartilages, which are thick in Children, but gradually become thinner as Ossification advances, till at last, in the Adult, the external marks of division are not to be seen ; though frequently some mark of distinction may be observed in the Cancelli.

VOL. I

P

DIF.

DIFFERENT KINDS

OF

CONNECTION OF BONES.

<p><i>SYNARTHROSIS,</i> Or Connection without intermediate Substance.</p>	<p><i>Suture,</i> Like a seam. { The Bones of the Cranium, and greater part of those of the Upper Jaw with each other.</p> <p><i>Gomphosis,</i> Like a Nail in a Board. { The Teeth in the Alveoli.</p> <p><i>Schindelysis,</i> Or <i>Furrowing.</i> { Bones of the Septum Narium to each other.</p>
<p><i>SYMPHYSES,</i> Or Connection by intermediate Substance.</p>	<p><i>Synchondroses,</i> Or Connection by Cartilage. { The Bodies of the Vertebrae to each other: The Ribs to the Sternum: The Ossa Innominata to the Os Sacrum, or to each other.</p> <p><i>Syndesmoses,</i> Or Connection by Ligament. { The Lower Jaw and Os Hyoides to the Head: The Ribs to the Spine: The Processes of the Vertebrae, and also the Bones of the Extremities to each other.</p>

DIF.

D I F F E R E N T K I N D S O F M O T I O N .

ARTHRODIA;

Where the flat ends of Bones are opposed to each other with little Motion.

{ Between the Clavicle and Scapula. The Bones in the second row of the Carpus. The Carpus and Metacarpus. The Tibia and Fibula. The greater number of Bones in the Tarsus. The Tarsus and Metatarsus.

Angular.

{ One Bone, in moving, forming an angle with another.

Lateral or Circular.

{ Between the first Vertebra, and Processus Dentatus of the second. Between the Radius and Ulna. Between the Occipital Bone and Atlas. Between the different Vertebrae. And between the Ribs and Vertebrae.

{ The Lower Jaw and Head. The Joint of the Elbow. The first and second Joints of the Thumb, and second and third of the Fingers. The Joint of the Knee. The Ankle. The two last Joints of the Toes. Between the first Vertebra, and Processus Dentatus of the second. Between the Radius and Ulna. Between the Occipital Bone and Atlas. Between the different Vertebrae. And between the Ribs and Vertebrae.

GINGLIMUS.

{ The Bones mutually receiving each other; and the Ligaments admitting of a hinge-like Motion.

ENARTHROSIS,

{ Or Ball and Socket, the Ligaments allowing Motion in all directions.

{ Inner end of the Clavicle. Head of the Os Humeri. Between the Fore-arm and Wrist, and between the two rows of Carpal Bones. At the root of the Metacarpal Bone of the Thumb, and root of the first Phalanx of the Fingers. At the Head of the Thigh-Bone. Between the Astragalus and Os Naviculare, and at the root of the first Phalanx of the Toes.

OF THE
LIGAMENTS
AND
OTHER PARTS OF THE JOINTS.

LIGAMENTS are *white, strong, flexible* bodies, of an intermediate firmness between Cartilage and common Membrane.

They are *composed* of Fibres variously disposed; the greater part of them, however, running in a longitudinal direction.

The Ligaments of moveable Joints arise, for the most part, from the *Cervix*, and beyond the edges, of the articulating Cartilage of one Bone, and are fixed, in a similar manner, into the corresponding parts of the Bone adjoining.

The Ligaments thus fixed are called *Capsular*, from their forming a *Purse* or *Bag*, which includes the Joint.

Where *variety of Motion* is allowed, the Capsular Ligament is nearly of equal strength round the whole circumference of the Joint; but, where the Joint is of the nature

ture

ture of a *Hinge*, the Ligament is strongest at the sides of that Hinge.

The *outer* part of the Capsular Ligament is formed of a continuation of the *Periosteum*; which is connected to the surrounding parts by Cellular Substance; while the *inner* Layer,—remarkably thin and dense,—is reflected over the Bones and Cartilages which the Ligament includes; one part of it thus forming *Periosteum*, and the other *Perichondrium*.

In certain parts of the Body, there are, besides the Capsular Ligaments, others for the firmer connection of the Bones, or for confining the motion to one particular side; as the *Round Ligament* of the Thigh, or *Crucial*, or *Lateral* Ligaments of the Knee.

Wherever the Ligaments are few, long, and weak, the Motions are more extensive; and, on the contrary, where the Ligaments are numerous, short, and strong, the Motions are more limited.

In some parts of the Body, Ligaments supply the place of Bones, as in the *Pelvis*: In others, they give origin to Muscles, as between the *Radius* and *Ulna*: In some parts, they assist in connecting immovable Bones, as the *Os Sacrum* and *Os Innominatum*: In others, they form a Socket in which moveable Bones play, as where part of the *Astragalus* moves on the Ligament stretched between the *Os Calcis* and *Os Scaphoides*.

Ligaments have numerous *Blood-vessels* which can be readily injected.

Upon the inner surface of the Capsular Ligaments, their

Arteries secrete a Liquor which assists in the lubrication of the Joints.

The *Nerves* of Ligaments are very minute, but in some parts can be easily traced upon their Surface.

The *Sensibility* of Ligaments, in the sound state, is inconsiderable; when in a state of Inflammation, however, they are found to occasion extreme pain.

Use of Ligaments.

The Capsular Ligaments connect Bones together, assist in the Secretion of the Synovia, which they contain, and prevent the other parts from being pinched in the Joint.

The other Ligaments join Bones together, and preserve them in their proper situation. In many parts, they give attachment to Tendons, and in some to the Fleshy parts of Muscles.

SYNOVIAL ORGANS,

Commonly called GLANDS of the JOINTS.

These are *Masses of Fat* found in the greater number of the Joints, covered with a continuation of the inner Layer of the Capsular Ligament, and projecting in such a manner as to be gently pressed, but not bruised, by the motions of the Joint; and, in proportion as these motions are more or less frequent, the Liquor which they secrete is discharged in a greater or smaller quantity.

In some Joints, they have the same appearance with the common Fat of the Body; in others, they are of a redder colour, from the numerous Blood-vessels dispersed upon them.

They have been generally considered as *Glands* lodged within

within Masses of Fat ; but, upon a minute inspection, no knotty or Glandular bodies are to be found in them ; nor have they the appearance of Glands, farther than in being Secreting Substances ; which circumstance alone assimilates them to the nature of Glands.

From the edges of these Fatty bodies, *Fimbriæ* hang loose, and convey a lubricating Liquor, called *Synovia*, into the Cavity of the Joints.

From the extremities of these *Fringes*, the Liquor can be readily squeezed out by pressure ; but their Cavities and Orifices are so minute, or are otherwise of such a nature as to have hitherto eluded discovery.

The *Fimbriæ* have been generally considered as *Excretory Ducts of Glands* within the Joints. Dr MONRO, however, in his Work upon the *Bursæ Mucosæ*, supposes them to be of the nature of the *Follicles of the Urethra*, which prepare a Mucilaginous Liquor, without the assistance of any knotty or Glandular Organ.

The *Arteries* which supply these Bodies with Blood for their Secretions, and the *Veins* which return the blood after the Secretion has been performed, can be readily seen ; but no *Nerves* can be traced into them ; nor does it appear that they possess a higher degree of Sensibility than the other parts of the Joints already described ; although, when they inflame and suppurate, they have in some instances been observed to occasion the most excruciating pain.

The *Synovia*, which is a thin Mucilaginous Liquor, resembling the glair of an egg, appears to be furnished, not only by the Substances already mentioned, but also by the

inner Surface of the Capsular Ligaments in general, and serves for the lubrication of the Joints.

OF THE LIGAMENTS IN PARTICULAR.

LIGAMENTS of the LOWER JAW.

The *Capsular Ligament*, which arises from the whole margin of the Articular Cavity of the Temporal Bone, and is inserted, first into the edge of the Interarticular Cartilage, and afterwards round the Cervix of the Lower Jaw. This Ligament, like others which belong to Joints of the Hinge kind, is thickest and strongest at the sides of the Joint, to confine the lateral motion of the Jaw.

By it the Jaw is allowed to move upwards, downwards, or a little forwards or backwards, or to a side, and the motions are rendered easier by the intervention of the Interarticular Cartilage, which follows the Condyle in its different motions.

The *Suspensory Ligament* of the Stylo-Glossus Muscle, which is attached by one end to the Styloid Process, and to a Ligament running from that Process to the *Os Hyoides*; and by the other end, to the Angle of the Lower Jaw, serving to support the Stylo-glossus Muscle, and to give Origin to part of it.

The *Lateral Ligament*, which arises from the margin of the Articular Cavity of the Temporal Bone, and is inserted into the inner Surface of the Angle of the Lower Jaw, near its posterior Foramen;—assisting to keep the Jaw *in situ*, and to prevent the inferior Maxillary Vessels
and

and Nerve from being injured by the action of the Pterygoid Muscle.

LIGAMENTS *connecting the HEAD with the First and Second VERTEBRÆ of the NECK, and these Two VERTEBRÆ with each other.*

The *two Capsular Ligaments*, which arise from the margin of the superior articulating Processes of the Atlas, and are inserted into the Base of the Condyles of the Occipital Bone, where the Head has its flexion and extension without rotation.

The *Circular Ligament*, which arises from the edge of the Spinal Hole of the first Vertebra, is connected with the Capsular Ligaments of the superior Articulating Processes of the Atlas, and is inserted into the edge of the Foramen Magnum of the Occipital Bone.

The *two Capsular Ligaments*, which fix the inferior oblique Processes of the Atlas, to the superior oblique of the Vertebra Dentata, and admit of the rotation of the Head, with a small degree of Flexion to either side.

The *Perpendicular Ligament*, which fixes the Processus Dentatus of the second Vertebra to the edge of the anterior part of the Foramen Magnum, between the Condyles.

The *two Lateral, or Moderator Ligaments*, which arise each from the side of the Processus Dentatus, and run outwards and upwards to be fixed to the inner part of the side of the Atlas, and to the inner edge of the Foramen Magnum. They are short, but of great strength, and prevent the Head from turning too far round.

The

The *Transverse Ligament*, which arises from the inner side of the Atlas, and, going across behind the *Processus Dentatus*, is fixed to the opposite side of the Atlas.

The edges of this Ligament extend upwards and downwards, and form two *Processes*, called its *Appendices*, which are fixed to the *Foramen Magnum* and *Processus Dentatus*. The middle of the Ligament is remarkably firm where that *Process* plays upon it. It keeps the *Processus Dentatus* in its place, and prevents it from injuring the *Spinal Marrow* in the different motions of the Head.

LIGAMENTS of the Other VERTEBRÆ.

The *Anterior Common Ligament* of the *Vertebræ*, which is a strong *Tendinous Band*, embracing the convex or outer part of the *Vertebræ*, from the upper to the under region of the *Spine*.—It is much thicker upon the fore-part than on the sides of the *Vertebræ*, by which the *Bones* are more firmly united anteriorly, and is thinnest in the *Neck* and *Loins*, where the motions of the *Spine* are greatest. Through its whole course, it sends off small *Processes* to be fixed to the *Bodies* of the *Vertebræ*, by which their connection is made more secure. It prevents the *Spine* from being stretched too much backwards.

The *Capsular Ligaments*, which join the articulating *Processes* to each other.

The *Crucial Intervertebral Ligaments*, which join the *Bodies* of the *Vertebræ* together, upon the outer edges of the *Intervertebral Substances*, to which also they firmly adhere.

The *Intervertebral Substances*, (already described along with

with the Bones), which join the Bodies of the Vertebrae together, and allow an yielding motion in all directions.

These Substances are so compressible as to yield to the weight of the upper part of the Body; so that, after having been in the erect posture through the course of the day, the height of a person is diminished in the evening, but, after a night's rest in the usual attitude, it is found to be restored.

The *Ligaments* which run from the edge of the Spinal Hole of one Vertebra to that of the next, so as to assist in filling up the Interstices, and in fixing the Vertebrae together.

A *Ligamentous Cord* which fixes the points of the Spinous Processes together.

Ligaments between the Transverse Processes of the Vertebrae of the Back, fixing these Processes to each other.

The *Posterior or Internal Common Ligament* of the Vertebrae, somewhat similar to the Anterior one.

It begins at the anterior edge of the Foramen Magnum, and after passing along the inner or concave part of the Bodies of the Vertebrae, and adhering firmly to their upper and under edges, terminates at the lower part of the Os Sacrum.—It prevents the Spine from being too much bent forwards.

LIGAMENTS of the RIBS.

The *Capsular Ligaments of the Heads of the Ribs*, which arise from these Heads, and are fixed to the Circumference of the Pits in the sides of the Bodies of the Vertebrae

bræ and Intervertebral Cartilages. The outer part of each Ligament sends off or is connected with radiated Fibres which are spread out upon the sides of the Vertebrae.

The *Capsular Ligaments of the Tubercles of the Ribs*, which arise round the articular Pits on the points of the Transverse Processes of the Vertebrae of the Back, and are fixed round the Tubercles of the Ribs.

The *Internal Ligaments of the Back of the Ribs*, called *Ligamenta Transversaria Interna*, which arise from the inferior Surfaces of the Transverse Processes, and are fixed to the Superior Margins of the Necks of the nearest Ribs.

The *External Ligaments of the Necks of the Ribs*, called *Ligamenta Transversaria Externa*. They arise from the points of the Transverse Processes externally, and are fixed to the back-part of the Necks of the Ribs.

Ligamenta Cervicis Costarum Externa, or *External Ligaments of the Necks of the Ribs*, which arise from the external Margins of the inferior oblique Processes, and descend obliquely outwards, to be fixed to the upper and outer part of the Necks of all the Ribs.

The Ligaments at this end of the Ribs, together with the situation of the Transverse Processes, admit of their motion upwards and downwards, but prevent them from moving in any other direction.

Short Ligamentous Fibres, which run from the Margins of the anterior extremities of the Ribs to the Margins of their corresponding Cartilages; the Cartilages and Ribs being joined by an union of Substance.

Radiated

Radiated Ligaments, which go from the anterior Surfaces of the Capsular Ligaments upon the external Surface of the Sternum.

Many of the Fibres of these Ligaments intermix with their fellows on the opposite side.

The *Capsular Ligaments of the Cartilages of the Ribs*, which arise from the Margins of the Articular Cavities of the Sternum, and are fixed round the extremities of the seven true Ribs.

Membrane proper to the Sternum, which is a firm Expansion composed of Tendinous Fibres running in different directions, but chiefly in a longitudinal one, and covering the anterior and posterior Surfaces of the Bone, where it is confounded with the Periosteum.

Ligaments of the Cartilago Ensigiformis, which are part of the proper Membrane of the Sternum, divided into strong Bands running obliquely from the under and fore part of the second Bone of the Sternum, and from the Cartilages of the seventh pair of Ribs, to be fixed to the Cartilago Ensigiformis.—The Ligaments covering the Sternum serve considerably to strengthen that Bone.

Thin Tendinous Expansions, which run over the Intercostal Muscles at the fore-part of the Thorax, and connect the Cartilages of the Ribs to each other.

LIGAMENTS

OF THE

BONES OF THE PELVIS.

THE *two Transverse Ligaments of the Pelvis*, which arise from the posterior part of the Spine of the Os Ilium, and run transversely. The *superior* is fixed to the Transverse Process of the last Vertebra of the Loins; the *inferior* to the first Transverse Process of the Os Sacrum.

The *Ileo-Sacral Ligaments*, which arise from the posterior Spinous Process of the Os Ilium, descend obliquely, and are fixed to the first, third, and fourth Spurious Transverse Processes of the Os Sacrum.

These, with the two Transverse Ligaments, assist in binding the Bones together to which they are connected.

The *Capsular Ligament of the Symphysis of the Os Ilium and Sacrum*, which surrounds the Joint, and assists in connecting the two Bones to each other.

A *very thin Cartilage* within this Joint, which cements
the

the two Bones strongly together, and which constantly adheres to the Os Sacrum, when the Joint is opened.

A *Ligamentous* and *Cellular Substance* containing *Mucus*, which forms the back-part of the Joint, also assisting to fix the two Bones to each other, in such a manner as to allow no motion. The Joint, however, along with its fellow, and that between the *Offa Pubis*, is useful in diminishing the effects which might result from Concussion.

The *two Sacro-Ischiatic Ligaments*, situated in the under and back part of the Pelvis. They arise in common from the *Transverse Processes* of the Os Sacrum, from the under and lateral part of that Bone, and from the upper part of the Os Coccygis. The first, called the *Large, External, or Posterior Sacro-Ischiatic Ligament*, descends obliquely, to be fixed to the *Tuberosity* of the Os Ischium. The other, called the *Small, Internal, or Anterior Ligament*, runs transversely to be fixed to the *Spinous Process* of the Os Ischium. These two Ligaments assist in binding the Bones of the Pelvis, in supporting its Contents, and in giving Origin to part of its Muscles.

The *two Membranous Productions* which are connected with the large *Sacro-Ischiatic Ligament*, termed by WEITBRECHT the *Superior* and *Inferior Appendices* of the large *Sacro-Ischiatic Ligament*.

The *Superior Appendix*, which is *Tendinous*, arises from the back-part of the *Spine* of the Os Ilium, and is fixed along the outer edge of the *Ligament*, which it increases in breadth.

The *Inferior* or *Falciform Appendix* is situated within the *Cavity* of the Pelvis; the back-part of it connected with

with the middle of the large External Ligament, and the remainder extended round the Curvature of the Os Ischium.

These two Productions assist the large Sacro-Ischiatic Ligament in furnishing a more commodious situation for and attachment of part of the Gluteus Maximus and Obturator Internus Muscles.

Besides the *Ileo-Sacro* and *Sacro-Ischiatic* Ligaments, several other *Slips* are observed upon the back of the Os Sacrum, which descend in an irregular manner, and strengthen the connection between that Bone and the Os Ilium.

The large Holes upon the back-part of the Os Sacrum are also surrounded with various *Ligamentous Expansions* projecting from one Tubercle to another, and giving origin to Muscular Fibres, and protection to small Vessels and Nerves which creep under them.

A *General Covering* sent down from the Ligaments of the Os Sacrum, which spreads over and connects the different pieces of the Os Coccygis together, allowing considerable motion, as already mentioned in the description of this Bone.

Longitudinal Ligaments of the Os Coccygis, which descend from those upon the Dorsum of the Os Sacrum, to be fixed to the back-part of the Os Coccygis. The Ligaments of this Bone prevent it from being pulled too much forwards by the action of the Coccygeus Muscle, and they restore the Bone to its natural situation, after the Muscle has ceased from acting.

The *Inguinal Ligament*, or *POUPART'S*, or *FALLOPIUS'S*
Ligament,

Ligament, which runs transversely from the anterior superior Spinous Process of the Os Ilium to the Crest or Angle of the Os Pubis. It has been formerly described as the inferior margin of the Tendon of the External Oblique Muscle of the Abdomen. By WEITBRECHT, and some others, it is regarded as a distinct Ligament. It contributes to the support of the Viscera at the under end of the Abdomen, and assists in furnishing a Passage to the Muscles, Vessels, and Nerves, which go behind it from the Pelvis to the Thigh.

The *Capsular Ligament of the Symphysis of the Ossa Pubis*, which joins the two Bones to each other externally.

The *Ligamentous Cartilage*, which unites the two Ossa Pubis so firmly together as to admit of no motion, excepting in the state of pregnancy, when it is frequently found to be so much thickened as to be capable of yielding a little in the time of Delivery.

The *Obturator Membrane, or Ligament of the Foramen Thyroideum*. It adheres to the margin of the Foramen Thyroideum, and fills the whole of that Opening, excepting the Oblique Notch at its upper part for the passage of the Obturator Vessels and Nerve. It assists in supporting the Contents of the Pelvis, and in giving origin to the Obturator Muscles.

LIGAMENTS

OF

THE SUPERIOR EXTREMITY.

LIGAMENTS, &c. of the CLAVICLE.

Radiated Ligaments, which arise from the outer Surface of the inner end of the Clavicle, and are fixed round the edge of the corresponding Articular Cavity of the Sternum.

The *Capsular Ligament* which lies within the former.

The *Interarticular Cartilage*, which divides the Joint into two distinct Cavities, and accommodates the articulating Surfaces of the Clavicle and Sternum.

The *Interclavicular Ligament*, joining the Clavicles together behind the top of the Sternum, and partly formed by a continuation of the Radiated Ligaments.

The *Ligamentum Rhomboideum*, which arises from the inferior rough Surface at the anterior extremity of the Clavicle, and is fixed to the Cartilage of the first Rib.

By

By the Ligaments of this Joint, with the assistance of the intervening Cartilage, the Shoulder is allowed to move in different directions, as upon a centre.

The *Ligaments* which join the posterior extremity of the Clavicle to the Acromion, having a Capsular Ligament within, and sometimes an Interarticular Cartilage.

The *Ligamentum Trapezoideum*, which arises from the point of the Coracoid Process, and is fixed to the under edge of the Clavicle.

A *thin Ligamentous Slip* which comes from the Tendon of the Subclavian Muscle, or from the Clavicle, and joins the Trapezoid Ligament.

The Ligaments fixing the Clavicle to the Scapula are of such strength, as to allow only a small degree of motion, and that chiefly of a rolling or twisting nature.

LIGAMENTS *proper to the* SCAPULA.

The *Proper Anterior Triangular Ligament of the Scapula*, which arises broad from the external Surface of the Coracoid Process, and becomes narrower where it is fixed to the posterior Margin of the Acromion.

This Ligament forms one continued Surface. It is thickest, however, on each side, and these thicker parts are united by a thin intermediate Ligamentous Membrane, which, when removed, gives to the Ligament the appearance of being double.—It confines the Tendon of the Supra-spinatus Muscle, and assists in protecting the upper and inner part of the Joint of the Humerus.

The *Posterior Ligament of the Scapula*, which is sometimes double, and is stretched across the Semilunar Notch

of the Scapula, forming that Notch into one or two Holes for the passage of the superior posterior Scapulary Vessels and Nerve. It also gives rise to part of the Omo-hyoideus Muscle.

LIGAMENTS, &c. of the JOINT of the SHOULDER.

The *Capsular Ligament*, which arises from the Cervix of the Scapula, behind the Margin of the Glenoid Cavity, and is fixed round the Neck of the Os Humeri, loosely inclosing the Ball of that Bone.

A *small Fimbriated Organ* within the Capsular Ligament, for the Secretion of the Synovia.

A *Sheath* sent down from the Fore-part of the Capsular Ligament, between the Tuberosities of the Os Humeri, which incloses the Tendon of the long Head of the Biceps Flexor Cubiti Muscle.

Additional Ligamentous Bands of the Capsular Ligament, which adhere to its anterior Surface.—That which gives most strength to this Joint, as well as to several other Joints of the Body, is the covering from the surrounding Muscles.

From the shallowness of the Glenoid Cavity, from the extent and looseness of the Capsular Ligament, and from the Structure of the other parts of the Joint, more extensive motion is allowed to the Os Humeri than to any other Bone of the Body; as it can not only move freely to every side, but also possesses a considerable degree of motion upon its own axis.

LIGAMENTS, &c. of the JOINT of the ELBOW.

The *Capsular Ligament*, which arises round the Margin of the Articular Surface, at the lower end of the Os Humeri, and is fixed about the edge of the Articular Surface of the Ulna, and also to the Coronary Ligament of the Radius.

The sides of the Elbow-Joint are strengthened by *two Ligamentous Bands*, which adhere so firmly to the Capsular Ligament, that they appear to be part of its Substance, viz.

The *Brachio-Cubital* or *Internal Lateral Ligament*, which arises from the fore-part of the inner Condyle of the Os Humeri, and spreads out, in a radiated manner, to be fixed to the inside of the Coronoid Process of the Ulna, and

The *Brachio-Radial*, or *External Lateral Ligament*, which is like the former, but larger. It arises from the external Condyle of the Os Humeri, and is expanded upon the Coronary Ligament into which it is inserted.

The *Coronary, Annular, or Orbicular Ligament* of the Radius, which arises from one side of the small Semilunar Cavity of the Ulna, and, after surrounding the Neck of the Radius, is fixed to the other side of that Cavity. The upper edge of it is incorporated with, and may be considered as a part of the Capsular Ligament, while its under edge is fixed round the Neck of the Radius, allowing that Bone to move freely round its own axis, upon the Articular Surface of the Os Humeri, and in the small Semilunar Cavity of the Ulna.

Besides the Ligaments already described, there are others which run in various directions upon the fore and back parts of the Joint, contributing to its strength, and having the names of *Anterior* and *Posterior Accessory Ligaments*.

The Ligaments and Bones of the Joint of the Elbow form a complete Hinge, which allows the Fore-arm to have free flexion and extension upon the Os Humeri, but no rotation when the Arm is in the extended state, though a small degree of it is perceptible when the Joint is moderately bent, and the Ligaments thereby relaxed.

Within the Capsular Ligament, and chiefly in the upper part of the Pit of the Os Humeri in which the Olecranon plays, the *Fatty Substance* is lodged for the lubrication of the Joint.

A *similar Substance*, but much smaller in quantity, is also found in the Depression in which the Coronoid Process of the Ulna moves.

LIGAMENTS *between the Bodies, and between the Under Ends of the RADIUS and ULNA.*

The *Interosseous Ligament*, which extends between the sharp Ridges of the Radius and Ulna, filling up the greater part of the space between these two Bones;—composed of small *Fasciculi*, or *Fibrous Slips*, which run obliquely downwards and inwards. Two or three of these, however, go in the opposite direction; and one of them, termed *Oblique Ligament*, and *Chorda Transversalis Cubiti*, is stretched between the Tubercle of the Ulna and under part of the Tubercle of the Radius.

In different parts of the Interosseous Ligament there are Perforations for the passage of Blood-vessels from the fore to the back part of the Fore-Arm, and a large Opening is found at the upper edge of it, which is occupied by Muscles.

This Ligament prevents the Radius from rolling too much outwards, and furnishes a commodious attachment for Muscles.

The *Capsular*, or *Sacciform Ligament*, which arises from the edges of the Semilunar Cavity at the under end of the Radius, and surrounds the Head of the Ulna, allowing the Radius to turn upon the Ulna in performing the different motions of Pronation and Supination of the Hand.

LIGAMENTS, &c. between the FORE-ARM and WRIST.

The *Capsular Ligament*, which arises from the Margin of the Glenoid or Navicular Cavity of the Radius, and from the edge of the moveable Cartilage at the Head of the Ulna, and is fixed to the Cartilaginous edges of the three first Bones of the Carpus.

The *Interarticular Cartilage*, placed between the Head of the Ulna and Os Cuneiforme, and which is a continuation of the Cartilage covering the end of the Radius.

The *Two Lateral Ligaments*, which arise from the Styloid Processes of the Radius and Ulna, and are fixed to the Bones of the Carpus nearest them.

The Ligaments of this Joint allow extensive motion forwards and backwards, and a considerable degree of it to either side.

The *Mucous Ligament*, which lies within the Joint. It extends from the Groove between the two first Bones of the Carpus, to the corresponding part of the Radius, and is supposed to regulate the Mucous Organ connected with it.

LIGAMENTS of the CARPUS.

The *Anterior, Annular, or Transverse Ligament*, which is stretched across from the projecting Points of the Pisiform and Unciform Bones, to the Os Scaphoides and Trapezium, and forms an arch which covers and preserves in their places the Tendons of the Flexor Muscles of the Fingers.

The *Capsular Ligament*, which arises from the Cartilaginous edge of the upper Row, and is fixed in a similar manner to that of the under Row of the Carpus, admitting chiefly of flexion and extension, and that in a smaller degree than in the former Joint.

The *Short Ligaments* of the Bones of the Carpus, which are *small Ligamentous Slips* running in various directions, joining the different Bones of the Carpus,—first of the same Row, then of the two Rows together. They are termed *Oblique, Transverse, Capsular, and Proper Ligaments* of the Bones of the Wrist, and admit only of a small degree of yielding between the different Bones in the same Row.

LIGAMENTS *between the* CARPAL *and* METACARPAL
BONES.

The *Articular Ligaments*, which arise from the Margins of the second Row of the Carpal Bones, and are fixed to the Margins of the adjoining Bones of the Metacarpus. *Other Ligaments* run in a radiated manner from the Carpal to the Metacarpal Bones; the whole getting the names of *Articular, Lateral, Straight, Perpendicular, &c.* according to their different directions.

From the flatness of the Articular Surfaces, and strength of the Connecting Ligaments, very little motion is allowed between the Carpus and Metacarpus.

LIGAMENTS *between the Extremities of the* METACARPAL
BONES.

The *Interosseous Ligaments* at the *Bases* of the Metacarpal Bones. They are short Slips, which run transversely, and join these Bones to each other, obtaining the names of *Dorsal, Lateral, or Palmar*, according to their different situations.

The *Interosseous Ligaments* at the *Heads* of the Metacarpal Bones, which run transversely in the Palm, and connect the Heads of these Bones to each other.

LIGAMENTS *at the Base of the* METACARPAL BONE *of the*
THUMB, *and at the First Joint of the* FINGERS.

These consist of the *Capsular Ligaments* which inclose the Joints, and the *Lateral Ligaments* which are situated at the sides of the Joints, adhering to and strengthening them;

them; the whole admitting of flexion, extension, and lateral motion.

LIGAMENTS of the *First and Second JOINTS of the THUMB,*
and *Second and Third JOINTS of the FINGERS.*

The *Capsular Ligaments* inclosing the Joints.

The *Lateral Ligaments* placed at the sides of the Joints, and adhering to the Capsular Ligaments, confining the motion to flexion and extension.

LIGAMENTS retaining the TENDONS of the MUSCLES of the
HAND and FINGERS, in situ.

The *Anterior, Transverse, or Annular Ligament* of the Wrist,—already described.

The *Vaginal Ligaments* of the Flexor Tendons, which are fine Membranous Webs connecting the Tendons of the Sublimis, first to each other, then to those of the Profundus, and forming, at the same time, *Bursæ Mucosæ*, which surround the Tendons.

The *Vaginal or Crucial Ligaments of the Phalanges*, which arise from the Ridges on the concave side of the Phalanges, and run over the Tendons of the Flexor Muscles of the Fingers. Upon the Body of the Phalanges, they are thick and strong, to bind down the Tendons; but over the Joints they are thin, and have, in some parts, a Crucial appearance, to allow the ready motion of the Joints.

The *Accessory Ligaments of the Flexor Tendons of the Fingers*, which are *small Tendinous Fræna*, arising from the first and second Phalanges of the Fingers. They run obliquely

liquely forwards within the Vaginal Ligaments, terminate in the Tendons of the two Flexor Muscles of the Fingers, and assist in keeping them in their places.

The *External Transverse* or *Posterior Annular Ligament of the Wrist*, which is part of the Aponeurosis of the Fore-Arm, extending across the back of the Wrist, from the extremity of the Ulna and Os Pisiforme to the extremity of the Radius. It is connected with the small Annular Ligaments which tie down the Tendons of the Extensores Ossis Metacarpi et Primi Internodii Pollicis, and the Extensor Carpi Ulnaris.

The *Vaginal Ligaments* which adhere to the former Ligaments, and serve as Sheaths and Bursa Mucosa to the Extensor Tendons of the Hand and Fingers.

The *Transverse Ligaments* of the Extensor Tendons, which are Aponeurotic Slips running between the Tendons, near the Heads of the Metacarpal Bones, and retaining them in their places.

LIGAMENTS

OF

*THE INFERIOR EXTREMITY.*LIGAMENTS *connecting the Os FEMORIS with the Os*
INNOMINATUM.

THE *Capsular Ligament*, which is the largest and strongest of the body, arises round the outside of the Brim of the Acetabulum, embraces the Head of the Thigh-Bone, and incloses the whole of its Cervix as far as the root or outer extremity, round which it is firmly connected.

The *outer part* of the Capsular Ligament is extended farther down than the *inner*, which is reflected back upon the neck of the Bone, and in certain parts forms *Retinacula*.

It is not every where of the same strength. It is thickest at its anterior and outer part; thinner where it is covered by the Internal Iliac Muscle; and thinnest posteriorly,

posteriorly, where the adjacent *Quadratus Muscle* is opposed to it.

It is strengthened on its outer surface by various *Accessory* or *Additional Slips*, which run down from the *Fascia Lata* and surrounding *Muscles*; but the strongest of these slips arises with diverging *Fibres* from the inferior anterior *Spinous Process* of the *Os Ilium*.

The *Capsular Ligament* allows the *Thigh-Bone* to be moved to every side, and to have a small degree of rotation.

The *Internal*, commonly called the *Round Ligament*, which arises by a broad flat beginning from the under and inner part of the *Cavity* of the *Acetabulum*, and is connected with the Substance termed *Gland of the Joint*. From this it runs backwards and a little upwards, becoming gradually narrower and rounder, to be fixed to the *Pit* upon the inner *Surface* of the *Ball* of the *Os Femoris*.

The *Round Ligament* prevents the *Bone* from being dislocated upwards, and assists in agitating the *Mucous Substance* within the *Joint*.

A *Cartilaginous Ligament* surrounding the *Brim* of the *Acetabulum*, and thereby increasing the depth of that *Cavity* for the reception of the *Head* of the *Thigh-bone*.

A *Double Cartilaginous Ligament*, stretched from one end of the *Breach*, in the under and fore part of the *Acetabulum*, to the other, but leaving a *Hole* behind it for containing part of the Substance called *Gland of the Joint*, and for the passage of the *Vessels* of that Substance.

This

This Ligament allows the Thigh-Bone to be moved inwards, and the Glandular-looking Substance to be agitated with safety.

The Substance called *Gland of the Joint*, covered with a Vascular Membrane, and lodged in a Depression in the under and inner part of the Acetabulum.

At the edges of this Substance *Fringes* are sent out, which furnish part of the Synovia for the lubrication of the Joint.

The edges of this Substance are fixed to those of the Pit in the Acetabulum, by small Ligamentous Bridles, termed *Ligamenta Mucosa*, or *Ligamentula Massæ Adiposæ Glandulosæ*.

LIGAMENTS, &c. of the JOINT of the KNEE.

The *Lateral Ligaments* which lie at the sides of the Joint, and adhere to the outer Surface of the Capsular Ligament.

The *Internal Lateral Ligament*, which is of considerable breadth, arising from the upper part and Tubercle of the internal Condyle of the Os Femoris, and inserted into the upper and inner part of the Tibia.

The *Long External Lateral Ligament*, which is narrower, but thicker and stronger than the former, arising from the Tubercle above the external Condyle of the Os Femoris, and fixed to the Fibula, a little below its Head.

Behind the long external Lateral Ligament, there is an *Expansion* attached nearly in the same manner as this Ligament, which has been termed the *External Short Lateral Ligament*.

These

These Ligaments prevent the lateral and rotatory motions of the Leg in the extended state, but admit of a small degree of both, when the Limb is bent.

The *Posterior Ligament* of WINSLOW, formed of irregular Bands which arise from the upper and back part of the external Condyle of the Os Femoris, and descend obliquely over the Capsular Ligament, to be fixed to the Tibia under the inner and back part of its Head. It prevents the Leg from being pulled farther forwards than to a straight line with the Thigh, and also furnishes a convenient situation to the beginnings of the Gastrocnemius and Plantaris Muscles.

When this Ligament is wanting, which is sometimes the case, its place is supplied by a *Membranous Expansion*.

The *Ligament of the Patella*, which arises from a Depression behind the Apex of the Bone, and is fixed to the Tuberosity of the Tibia. By the intervention of this Ligament, the Muscles inserted into the Patella are enabled to extend the Leg.

The *Capsular Ligament*, which arises from the whole Circumference of the under end of the Thigh-bone, some way above the Margin of the Articulating Cartilage; and above the posterior part of the Great Notch between the Condyles. From this it descends to be fixed round the Head of the Tibia, and into the whole Margin of the Articulating Surface of the Patella, in such a manner that the Patella forms part of the Capsule of the Joint.

The Capsular Ligament is of itself remarkably thin, but so covered by the Ligaments already mentioned, by the general Aponeurosis of the Limb, and by the Tendons of
Muscles

Muscles which surround the Joint, as to acquire a considerable degree of strength.

The Capsular Ligament, along with the other Ligaments of this Joint, admits of the flexion and extension of the Leg, but of no lateral nor rotatory motion in the extended state, though of a small degree of each when the Limb is fully bent.

Ligamentum Alare, Majus et Minus, which are Folds of the Capsular Ligament, running like *Wings* at the sides of the Patella, to which, and to the Fatty Substance of the Joint, they are attached.

Ligamentum Mucosum, continued from the joining of the Alar Ligaments to the Os Femoris, immediately above the Anterior Crucial Ligament. It preserves the Synovial Substance in its proper place, during the various motions of the Joint.

The *two Crucial or Internal Ligaments*, which arise from the Semilunar Notch between the Condyles of the Os Femoris, and decussate each other within the Cavity of the Joint.

The *Anterior Crucial Ligament* runs downwards and forwards, to be fixed to a Pit before the rough Protuberance in the middle of the Articulating Surface of the Head of the Tibia.

The *Posterior Crucial Ligament* descends to be fixed to a Pit behind the above-mentioned rough Protuberance.

These Ligaments, in the extended state of the Leg, prevent it from going forwards beyond a straight Line with the Thigh. When the Knee is bent, they admit the

the Foot to be turned outwards, but not in the contrary direction.

The *two Interarticular Cartilages*, called *Semilunar* from their shape, placed upon the top of the Tibia.

The outer convex edge of each of these Cartilages is thick, while the inner concave edge becomes gradually thinner, whereby the Sockets for the Condyles of the Os Femoris are rendered deeper, and this Bone and the Tibia are more accurately adapted to each other.

Each of these Cartilages is broad in the middle, their extremities becoming narrower and thinner as they approach each other. These extremities are termed *Cornua*, and are fixed by Ligaments to the Protuberance of the Tibia. The anterior Cornua are joined to each other by a *Transverse Ligament*.

The convex edge of these Cartilages is fixed to the Capsular and other Ligaments, in such a manner as to allow them to play a little upon the Cartilaginous Surface of the Tibia, by which the motions of that Bone upon the Condyles of the Os Femoris are facilitated.

The *Mucous* or *Fatty Substances* of this Joint, the largest of any in the Body, are situated in the different Interstices of the Joint, but chiefly round the edges of the *Pattella*.

Fimbriae project from the edges of these Fatty Substances, which discharge Synovia for the lubrication of the Joint.

LIGAMENTS *connecting the FIBULA to the TIBIA.*

The *Capsular Ligament* of the superior extremity of the Fibula, which ties it to the outer part of the Head of the

Tibia, and which is strengthened by the external Lateral Ligament of the Knee, and by the Tendon of the Biceps Muscle which is fixed to the Fibula.

The *Interosseous Ligament*, which fills the space between the Tibia and Fibula, like the Interosseous Ligament of the Fore-arm, and is of a similar structure, being formed of oblique Fibres, and perforated in various places for the passage of Vessels and Nerves.

At the upper part of it there is a large Opening, where the Muscles of the opposite sides are in contact, and where Blood-Vessels pass to the fore-part of the Leg.

It serves chiefly for the Origin of part of the Muscles which belong to the Foot.

The *Ligaments* of the inferior extremity of the Fibula, which are called *Anterior superior*, and *Posterior superior*, according to their situations, arising from the edges of the Semilunar Cavity of the Tibia, and fixed to the Malleolus Externus of the Fibula.

The Ligaments between the ends of the Tibia and Fibula join the two Bones so firmly together as to admit of no sensible motion.

LIGAMENTS *connecting the BONES of the TARSUS with those of the LEG.*

The *Anterior Ligament of the Fibula*, which arises from the anterior part of the Malleolus Externus, and passes obliquely forwards, to be fixed to the upper and outer part of the Astragalus.

The *Middle, or Perpendicular Ligament* of the Fibula, which arises from the point of the Malleolus Externus, and descends

descends almost perpendicularly, to be inserted into the outside of the Os Calcis.

The *Posterior Ligament of the Fibula*, which arises from the under and posterior part of the Malleolus Externus, and runs backwards, to be joined to the outer and posterior part of the Astragalus.

The *Ligamentum Deltoides* of the Tibia, which arises from the Malleolus Internus, and descends in a radiated form, to be attached to the Astragalus, Os Calcis, and Os Naviculare.

The *Capsular Ligament*, which lies within the former Ligaments, and is remarkably thin, especially before and behind, for the readier motion of the Joint. It arises from the Margin of the Articular Cavity of the Tibia and Fibula, and is fixed round the edge of the Articular Surface of the Astragalus.

The Ligaments and the other constituent parts of the Ankle-joint form it into a complete Hinge, which allows flexion and extension, but no rotation or lateral motion, in the bended state of the Foot, though a small degree of each when it is fully extended.

LIGAMENTS of the TARSUS.

The *Capsular Ligament*, which joins the Articular Surface of the Os Calcis to that of the Astragalus.

A number of *Short Ligaments*, lying in the Fossa of the Astragalus and of the Os Calcis, and forming the *Ligamentous Apparatus* of the Sinuous Cavity, which assists in fixing the two Bones strongly together.

The *Capsular*, the *Broad Superior*, and the *Internal La-*

teral Ligaments, connecting the Astragalus to the Os Naviculare, and admitting of the lateral and rotatory motions of the Foot.

The *Superior*, the *Lateral*, and the *Inferior Ligaments*, fixing the Os Calcis to the Os Cuboides, where a small degree of motion is allowed to every side. The inferior Ligament consists of a *Long*, an *Oblique*, and a *Rhomboid Ligament*, which are the longest and strongest of the Sole.

The *Superior Superficial*, the *Interosseous*, and the *Inferior Transverse Ligaments*, which fix the Os Naviculare and Os Cuboides to each other.

The *Superior Lateral*, and *Plantar Ligaments*, which fix the Os Naviculare to the Os Cuneiforme.

The *Superior Superficial*, and the *Plantar Ligaments*, which connect the Os Cuboides to the Os Cuneiforme Externum.

The *Dorsal* and *Plantar Ligaments*, which unite the Ossa Cuneiformia to each other.

Besides the Capsular Ligaments of the Tarsus already mentioned, each of the other Joints of these Bones is furnished with its *proper Capsular Ligament*.

From the strength of the Ligaments which unite these Bones to each other, and from the plainness of their Articulating Surfaces, no more motion is allowed than to prevent the effects of concussion in walking, leaping, &c.

LIGAMENTS *between the TARSUS and METATARSUS.*

The Bones of the Metatarsus are fixed to those of the Tarsus by *Capsular*, and numerous other *Ligaments*, which are called *Dorsal*, *Plantar*, *Lateral*, according to their situations;—and *Straight*, *Oblique*, or *Transverse*, according to their
their

their directions. The nature of this Joint is the same with that between the Carpus and Metacarpus.

LIGAMENTS *connecting the METATARSAL BONES*
to each other.

The *Dorsal, Plantar, and Lateral Ligaments*, which connect the Bases of the Metatarsal Bones with each other.

The *Transverse Ligaments*, which join the Heads of these Bones together.

LIGAMENTS of the PHALANGES of the TOES.

The *Capular and Lateral Ligaments*;—resembling those of the Fingers.

LIGAMENTS and SHEATHS retaining the TENDONS of the
MUSCLES of the FOOT and TOES, in situ.

The *Annular Ligament of the Tarsus*, which is a thickened part of the Aponeurosis of the Leg, splitting into superior and inferior Portions, which bind down the Tendons of the Extensors of the Toes, upon the fore-part of the Ankle.

The *Vaginal Ligament of the Tendons of the Peronei Muscles*, which, behind the Ankle, is common to both, but at the outer part of the Foot becomes proper to each; preserving each its respective Tendon in its proper place, and forming the *Bursa* of that Tendon.

The *Lacinated Ligament*, which arises from the inner Ankle, and spreads in a radiated manner, to be fixed partly in the Cellular Substance and Fat, and partly to the Os Calcis, at the inner side of the Heel. It incloses the *Tibialis Posticus* and *Flexor Digitorum Longus*.

The *Vaginal Ligament of the Tendon of the Extensor Proprius Pollicis*, which runs in a Crucial direction.

The

The *Vaginal Ligament of the Tendon of the Flexor Longus Pollicis*, which surrounds this Tendon in the Hollow of the Os Calcis.

The *Vaginal and Crucial Ligaments of the Tendons of the Flexors of the Toes*, which inclose these Tendons on the Surfaces of the Phalanges, and form their Bursæ Mucosæ.

The *Accessory Ligaments of the Flexor Tendons of the Toes*, which, as in the Fingers, arise from the Phalanges, and are included in the Sheaths of the Tendons in which they terminate.

The *Transverse Ligaments of the Extensor Tendons*, which run between them, and preserve them in their places behind the roots of the Toes.

END OF VOLUME FIRST.

J. PILLANS & SONS,
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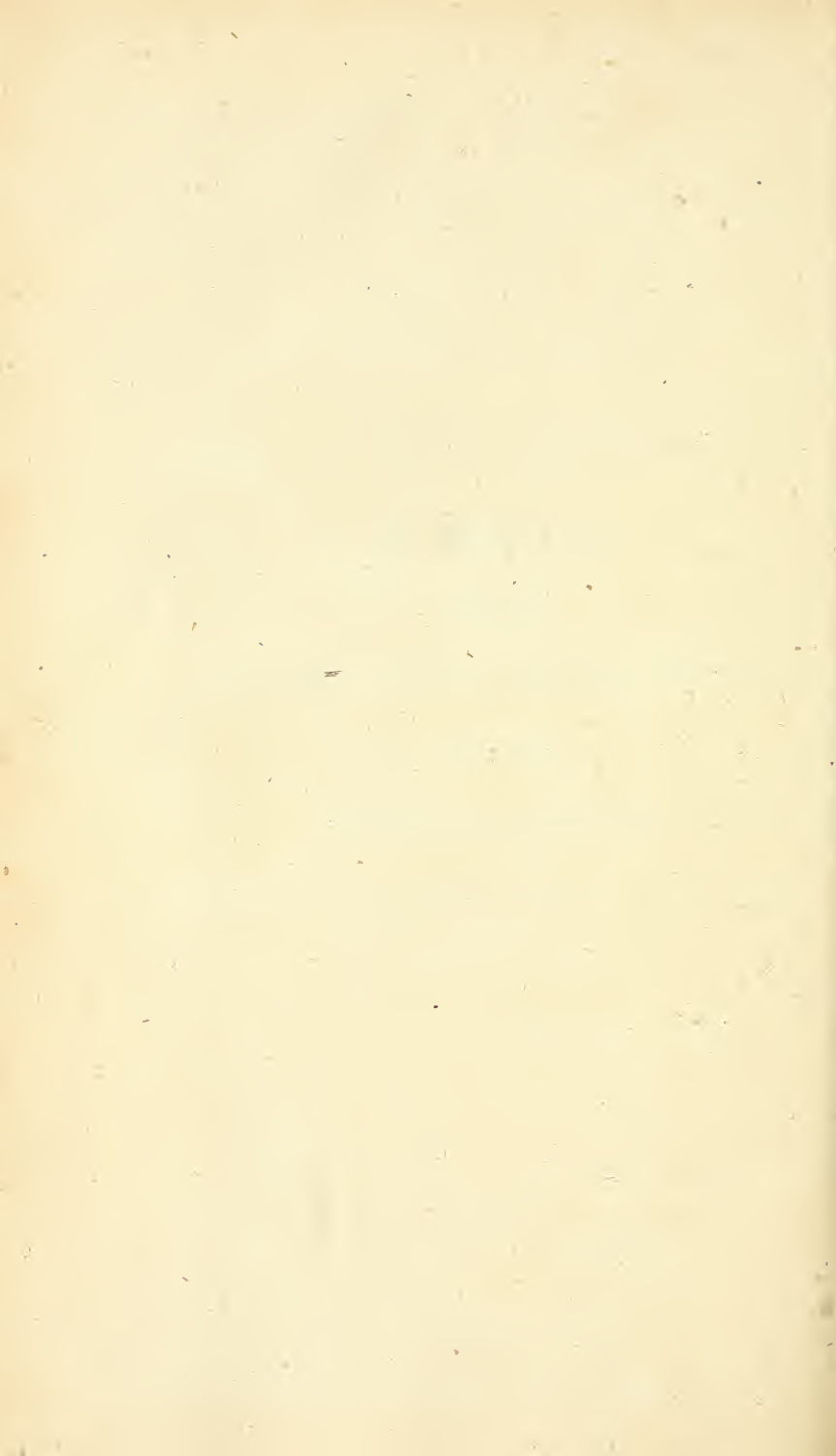
VIEWS

OF THE

MOST IMPORTANT PARTS

OF THE

HUMAN BODY.



VIEWS
OF THE
MOST IMPORTANT PARTS
OF THE
HUMAN BODY,
WITH
CONCISE EXPLANATIONS.

SELECTED
FOR THE USE OF STUDENTS ATTENDING
ANATOMY.

By ANDREW FYFE.

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TAB. 1.

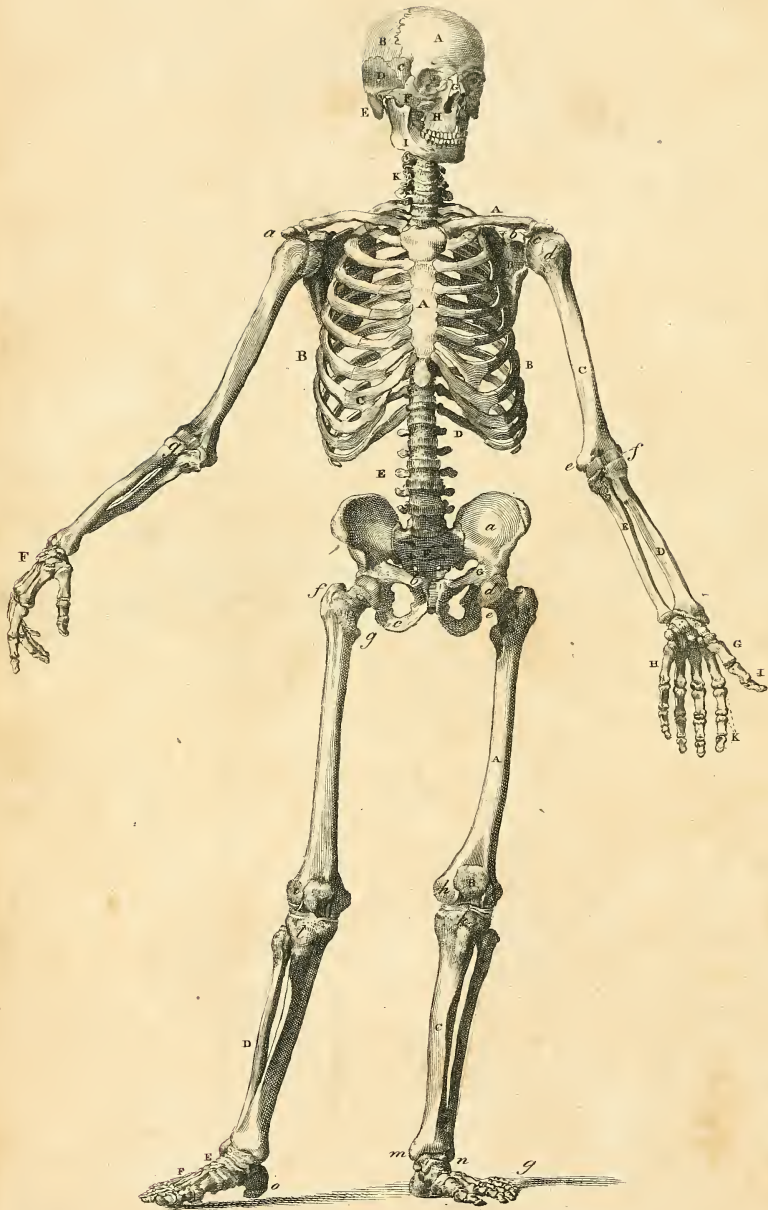


TABLE I.

REPRESENTS a FRONT View of the MALE SKELETON, with some of the CARTILAGES and LIGAMENTS which connect the BONES to each other.

HEAD and NECK.

- A, The frontal bone.
- B, The parietal bone.
- C, Temporal process of the sphenoid bone.
- D, Squamous part of the temporal bone.
- E, Mastoid process of that bone.
- F, The malar, or cheek-bone.
- G, The nasal bone, behind which is the nasal process of;
- H, The superior maxillary bone.
- I, The lower jaw.
- K, The cervical vertebræ, with their intermediate cartilages and transverse processes.

TRUNK.

- A, The sternum.
- B, The seventh, or last true rib.
- C, The cartilages of the ribs.
- D, The twelfth, or last false rib.
- E, The lumbar vertebræ, with their intervertebral cartilages and transverse processes.
- F, The os sacrum.
- G, The os innominatum, composed of,
 - a, The os ilium,
 - b, The os pubis,
 - c, The os ischium.

UPPER

T A B L E I. CONTINUED.

UPPER EXTREMITY.

- A, The clavicle.
B, Inner surface of the scapula.
a, The acromion of the scapula.
b, The coracoid process of that bone.
C, The os humeri.
c, The head, or ball of the os humeri, articulated with the glenoid cavity of the scapula.
d, Internal tubercle of the os humeri, and farther out, the groove for lodging the tendon of the long head of the biceps muscle.
e, The inner, and,
f, The outer condyle of the os humeri. Between *e* and *f*, the hollow for lodging the coronoid process of the ulna in the flexion of the fore-arm.
D, The radius.
g, The head of the radius.
E, The ulna.
h, The coronoid process of the ulna.
F, The bones of the carpus.
G, The metacarpal bone of the thumb.
H, The metacarpal bones of the fingers.
I, The two bones of the thumb.
K, The three phalanges of the fingers.

UNDER EXTREMITY.

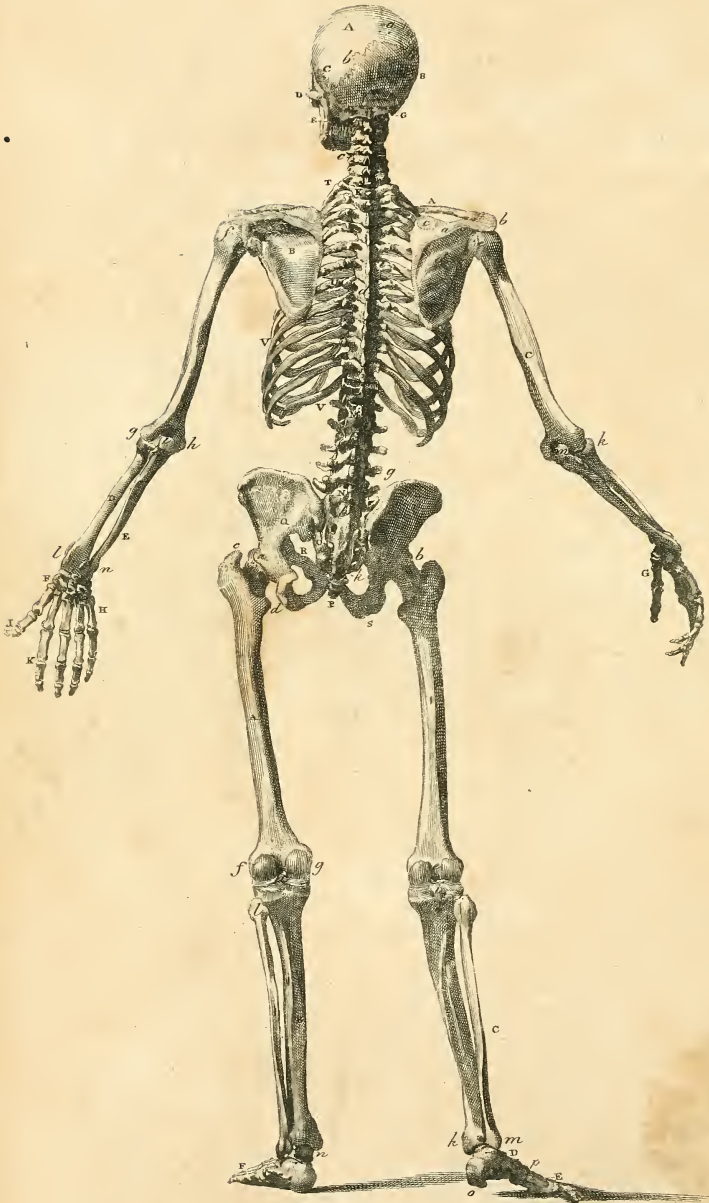
- A, The os femoris.
d, The ball, or head of this bone, lodged in the acetabulum.
e, The cervix of the bone.
f, The large trochanter.
g, The small trochanter.

f, The

TABLE I. CONTINUED.

- b*, The inner condyle.
- i*, The outer condyle.
- B**, The patella, placed upon the trochlea of the os femoris.
- C**, The tibia.
- k*, The head of the tibia, between which and the condyles of the os femoris, the femilunar cartilages appear.
- l*, The tubercle of the tibia.
- m*, The malleolus internus.
- D**, The fibula, the upper end of which is connected with the tibia.
- n*, The malleolus externus.
- E**, The bones of the tarsus.
- o*, The projection of the os calcis.
- F**, The metatarsal bones.
- G**, The phalanges of the toes.

TAB. II.



T A B L E II.

REPRESENTS a Back View of the MALE SKELETON,
with some of the CARTILAGES and LIGAMENTS
which connect the BONES to each other.

HEAD and TRUNK.

- A, The parietal bone.
 - a, The sagittal suture, and parietal hole.
 - B, The occipital bone.
 - b, b, The lambdoid suture.
 - C, The joining of the temporal and parietal bones.
 - D, The cheek-bone.
 - E, F, The inner or back-part of the jaws, with the teeth.
 - G, The first cervical vertebra.
 - H, The second cervical vertebra.
 - I, The seventh cervical vertebra.
 - c, The spinous processes of the cervical vertebrae.
 - K, The first dorsal vertebra.
 - L, The twelfth dorsal vertebra.
 - d, The spinous processes of the dorsal vertebrae.
 - e, Their transverse processes.
 - M, The first lumbar vertebra.
 - N, The fifth lumbar vertebra.
 - f, Their spinous, and,
 - g, Their transverse processes.
 - O, The os sacrum.
 - b, The uppermost spinous process. Farther out are seen the superior oblique processes of this bone, joined to the inferior oblique of the last lumbar vertebra.
- i, i, The*

T A B L E II. CONTINUED.

- i, i*, The lateral parts of the os sacrum, joined to the ossa innominata. Between *i* and *O*, the posterior foramina of the os sacrum.
- k*, An opening in the under and back part of this bone, covered in the subject by a ligamentous membrane.
- P*, The os coccygis, joined by its shoulders to the os sacrum at the lower part of the opening *k*.
- Q* The os ilium.
- R*, The os pubis.
- S*, The os ischium.
- T, U*, The seven true ribs.
- V, V*, The five false ribs.

SUPERIOR EXTREMITY.

- A*, The clavicle.
- B*, The dorsum scapulæ.
- a*, The spine of the scapula.
- b*, The acromion of the scapula.
- c*, A fossa for lodging the supra-spinatus muscle.
- d*, An irregular surface, occupied by the infra-spinatus muscle.
- C*, The os humeri.
- e*, The ball of the os humeri.
- f*, The external tubercle of the bone.
- g*, The external condyle.
- h*, The internal condyle.
- i*, Cavity for lodging the olecranon of the ulna.
- D*, The radius.
- k*, The head of the radius articulated with the trochlea of the os humeri.
- l*, The under end of the radius, grooved by the tendons of muscles.

E, The

T A B L E II. CONTINUED.

- E, The ulna.
m, The olecranon of the ulna.
n, The under end of the ulna, with its styloid process.
F, The bones of the carpus.
G, The metacarpal bone of the thumb.
H, The metacarpal bones of the fingers.
I, The two bones of the thumb.
K, The three phalanges of the fingers.

INFERIOR EXTREMITY.

- A, The os femoris.
a, Part of the ball of the os femoris.
b, The cervix of the bone.
c, The trochanter major.
d, The trochanter minor.
e, The cavity for lodging the popliteal vessels and nerves.
f, The external condyle.
g, The internal condyle.
h, The femilunar cartilages.
B, The tibia.
i, The head of the tibia.
k, The malleolus internus.
C, The fibula.
l, The head of the fibula.
m, The malleolus externus.
D, The bones of the tarsus.
n, The astragalus.
o, The os calcis.
p, The fore-part of the tarsus.
E, The bones of the metatarsus.
F, The phalanges of the toes.



Fig. 1.

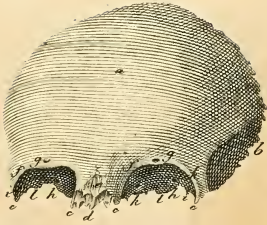


Fig. 2.

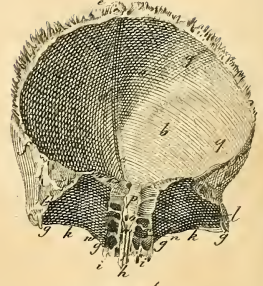


Fig. 3.

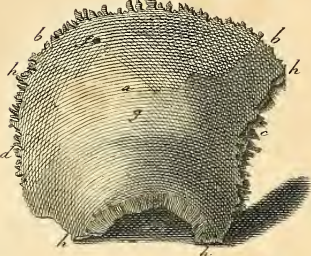


Fig. 4.

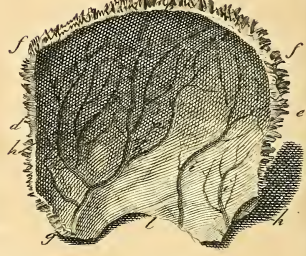


Fig. 5.



Fig. 6.



Fig. 7.

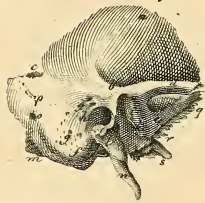


Fig. 8.



Fig. 9.



Fig. 10.



Fig. 11.

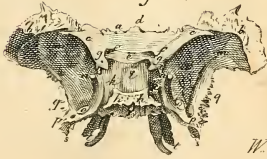


Fig. 12.



T A B L E III.

VIEWS of the different BONES of the CRANIUM.

FIG. 1.

The Outer Surface of the FRONTAL BONE.

- n*, The middle and convex part of the bone.
- b*, Part of the temporal fossa.
- c, c, c, c*, The angular processes.
- d*, The nasal process.
- e*, Eminences and cavities, to which the nasal and maxillary bones are fixed.
- f, f*, The superciliary arches.
- g, g*, The superciliary holes.
- h, h*, The orbital plates.
- i, i*, The lacrymal fossæ.
- k, k*, The internal orbital foramina.
- l, l*, Inequalities which unite this bone to the os sphenoides.

FIG. 2.

The Inner Surface of the FRONTAL BONE.

- a*, The concave part of the bone.
- b*, The cavity which lodges the anterior lobes of the brain.
- c*, The frontal spine.
- d*, Furrow where the falx is fixed, and the superior longitudinal sinus is lodged.
- e*, Ragged edge of the bone, which assists in forming the coronal future.
- f, f*, Other inequalities, which join the frontal to the sphenoid bone.
- g, g, g, g*, Inner surface of the angular processes.
- h*, The posterior surface of the nasal process.
- i, i*, Other inequalities, near the nasal process.
- k, k*, The orbital plates.

l, l, The

T A B L E III. CONTINUED.

- l, l*, The lacrymal fossæ.
m, m, Cells which correspond with those of the œthmoid bone.
n, n, The passages from the frontal sinuses.
o, The foramen cæcum.
p, The opening which receives the cribriform plate of the œthmoid bone.
q, q, Furrows which lodge the blood-vessels of the dura mater.

F I G. 3.

External Surface of the Right PARIETAL BONE.

- a*, The middle convex part of the bone.
b, b, The upper ragged edge of the bone, which, when joined to its fellow, forms the sagittal future.
c, The anterior edge, which assists in forming the coronal future.
d, The posterior edge, which joins the occipital bone, and forms the lambdoid future.
e, The inferior semilunar edge, which joins the squamous part of the temporal bone.
f, The parietal hole.
g, An arched ridge which gives origin to a large share of the temporal muscle.
h, h, h, h, The angles of the bone.

F I G. 4.

Internal Surface of the same PARIETAL BONE.

- a*, The middle concave part.
b, The inner surface of the upper edge of the bone, where the indentations are more apparent than those of the outer side.
c, The parietal hole.

d, Anterior

T A B L E III. CONTINUED.

- d*, Anterior serrated edge of the bone.
e, Posterior edge, more indented than the anterior one.
f, f, The superior angles.
g, g, The inferior anterior angle, where the beginning of the furrow is seen, which lodges the trunk of the principal artery of the dura mater.
h, h, The ramifications of that furrow.
i, i, Small furrows which lodge other arteries of the dura mater.
k, A depression which lodges part of the lateral sinus.
l, The inferior edge of the bone, considerably thinner than the rest.

F I G. 5.

View of the External Surface of the OCCIPITAL BONE.

- a*, The superior angle of the bone.
b, b, The ragged edge, which assists in forming the lambdoid suture.
c, c, The irregularities at the lateral and inferior parts of the bone, where it is joined to the ossa temporum.
d, d, The large transverse arched ridge, or spine.
e, e, Muscular prints upon the transverse ridge.
f, The perpendicular spine.
g, The smaller arched ridge, crossing the perpendicular spine.
h, h, Muscular prints above,
i, The foramen magnum.
k, k, The occipital condyles.
l, l, The posterior condyloid foramina.
m, m, The inner side of the left, and outer side of the right anterior condyloid foramen.
n, n, Nitches which assist in forming the holes common to the occipital and temporal bones.
o, The cuneiform process, marked by the attachment of muscles.

F I G.

T A B L E III. CONTINUED.

FIG. 6.

Internal Surface of the OCCIPITAL BONE.

- a*, The superior angle of the bone.
- b, b*, The middle or lateral angles.
- c, c*, Eminences and cavities which assist in forming the lambdoid future,
- d, d*, The superior occipital fossæ, which lodge a share of the posterior lobes of the brain.
- e, e*, The inferior occipital fossæ, which contain part of the cerebellum.
- f, f*, The upper limb of the perpendicular spine, which receives the superior longitudinal sinus, and has the falx fixed to it.
- g*, The lower limb of that spine, to which the falx minor is fixed.
- h, h*, The fossæ, which contain the lateral sinuses, and have the tentorium fixed to their edges.
- i, i*, The openings which form part of the foramina lacera, common to this bone and the os temporis.
- k, k*, The small processes which assist in forming the foramina lacera.
- l, l*, The posterior condyloid holes:
- m*, The anterior condyloid hole of the right side.
- n*, The concave surface of the cuneiform process.
- o*, The inequalities of the cuneiform process, by which it is united with the sphenoid bone.
- p*, The foramen magnum.

FIG. 7.

The Outer Surface of the TEMPORAL BONE of the Right Side.

- a*, The upper and squamous part of the bone.
- b*, The under part, which lodges a portion of the temporal muscle.

c, That

TABLE III. CONTINUED.

- c*, That part of the bone which assists in forming the additamentum of the squamous future.
- d*, The zygomatic process.
- e*, The transverse, or articular process.
- f*, The mastoid process.
- g*, Small holes, for transmitting vessels to the bone, or to the dura mater.
- h*, Meatus auditorius externus, surrounded by a rough margin.
- i*, The glenoid, or articular cavity.
- k*, The glenoid fissure, for the attachment of part of the articular ligament.
- l*, The vaginal process.
- m*, Part of the mastoid groove.
- n*, The styloid process.
- o*, The foramen mastoideum.
- p*, The base, or upper part of the mastoid process.
- q*, The inferior and anterior part of the bone, which joins the os sphenoides.
- r*, A small portion of the Eustachian tube.
- s*, The point of the pars petrosa.

FIG. 8.

The Inner Surface of the TEMPORAL BONE.

- a*, The upper edge of the squamous process.
- b*, The middle of that process, marked by the convolutions of the brain.
- c*, A part of the bone which joins the os sphenoides.
- d*, Nitch which receives the under and back part of the parietal bone.
- e*, The upper part of the pars petrosa.
- f*, A groove which lodges the superior petrosal sinus.

T A B L E III. CONTINUED.

- z*, Fossa which lodges part of the lateral sinus.
- b*, Meatus auditorius internus.
- i*, Nitch which assists in forming the foramen lacerum.
- k*, Part of the fossa which lodges the beginning of the internal jugular vein.
- l*, The posterior part of the bone which joins the os occipitis.
- m*, The foramen mastoideum.
- n*, A portion of the mastoid process.
- o*, The mastoid groove.
- p*, The styloid process.
- q*, The inner extremity of the pars petrosa divided into two portions.

F I G. 9.

The Upper and Inner Surface of the CETHMOID BONE.

- a*, The anterior extremity of the bone, terminating in a small flat process.
- b*, The crista galli.
- c, c*, The cribriform plate, for the passage of the olfactory nerves.
- d, d*, The posterior cethmoid cells.
- e*, The back-part of the nasal plate, which forms part of the septum narium.
- f, f*, The posterior margin of the bone.
- g*, The os planum of the left side.
- h, h*, The sphenoid cornua, or triangular bones, which join the body of the sphenoid bone; their fore-parts being fixed to the cethmoid one.

F I G. 10.

The Under and Outer Surface of the CETHMOID BONE.

- a*, The nasal plate, which forms the upper part of the septum narium.

b, b, The

T A B L E III. CONTINUED.

b, b, The ossa spongiosa superiora, convex towards the septum of the nose, and concave outwards.

Between the ossa spongiosa and nasal plate deep chinks are seen, which separate these processes from each other.

c, c, Inequalities by which this bone is joined to the frontal one.

d, d, The sphenoid cornua.

F I G. 11.

The Inner or Upper Surface of the SPHENOID BONE.

a, The fore-part of the bone, which joins the under and back part of the frontal one.

b, b, The temporal plates or processes.

e, c, The transverse processes.

d, A small anterior process, which unites with the oethmoid bone.

e, The processus olivaris.

f, f, The foramina optica.

g, g, The anterior clinoid processes.

h, h, The posterior clinoid processes.

i, i, Part of the foramina lacera.

k, k, Impressions made by the internal carotid arteries.

l, The fella Turcica.

m, m, The temporal fossæ, which receive the lateral lobes of the brain.

n, n, The foramina rotunda.

o, o, The foramina ovalia.

p, p, The foramina spinalia.

q, q, Ragged edge of the bone which assists in forming the sphenoid future.

r, The back-part of the body of the bone, which joins the cuneiform process of the occipital one.

s, s, Part of the spinous, and,

t, t, Part of the pterygoid processes.

T A B L E III. CONTINUED.

F I G. 12.

The Outer or Under Surface of the SPHENOID BONE.

- a*, The processus azygos.
- b, b*, The sphenoid cornua.
- c, c*, The openings of the sphenoid sinuses.
- d, d*, The foramina lacera.
- e*, The fore-part of the body of the bone.
- f, f*, The outer surface of the transverse processes.
- g, g*, The orbital plates.
- h, h*, The temporal processes.
- i, i*, The asperities, by which this bone is joined to the ossa malarum.
- k, k*, Gutters, which lodge branches of the fifth pair of nerves.
- l, l*, The foramina rotunda.
- m, m*, The foramina pterygoidea.
- n, n*, Anterior openings, which assist in forming the sphenoid fissures.
- o, o*, The foramina ovalia.
- p, p*, The spinous processes.
- q, q*, The roots of the pterygoid processes.
- r, r*, The internal plates of the pterygoid processes.
- s, s*, Hook-like processes at the extremities of the internal plates.
- t, t*, The external plates of the pterygoid processes.
- u, u*, Parts of the bone adapted to the ossa palati.
- v, v*, Posterior openings, common to the occipital and temporal bones, over which the internal carotid arteries pass.

TAB. IV.

Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.



Fig. 5.

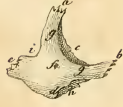


Fig. 6.



Fig. 7.



Fig. 8.



Fig. 9.



Fig. 10.



Fig. 11.



Fig. 12.



Fig. 13.



Fig. 14.

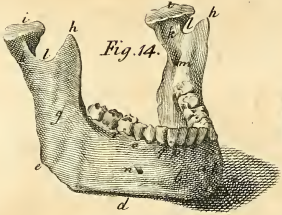


Fig. 15.



Fig. 16.

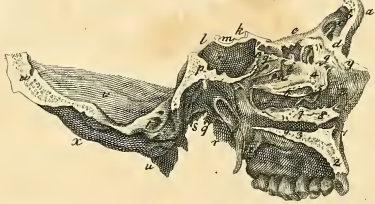


Fig. 17.

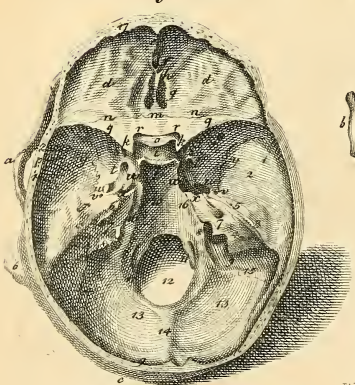
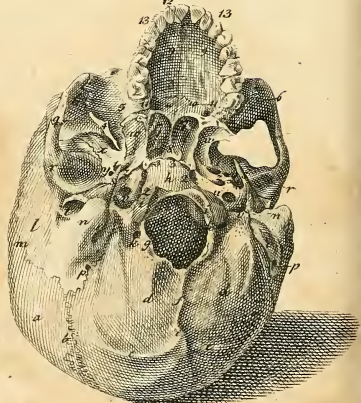


Fig. 19.



Fig. 18.



T A B L E I V.

REPRESENTS the different BONES of the FACE, a Section of the NOSE, the Inner, and Under Sides of the SKULL, with the Small Bone termed Os HYOIDES.

FIG. 1.

The Outer Surface of the OSSA NASI.

- a, a,* The upper part, which is joined to the frontal bone.
- b, b,* The lower ragged end, to which the cartilage of the nose is fixed.

The black points represent holes penetrating the bones.

FIG. 2.

The Inner Surface of the OSSA NASI.

- a, a,* The inner edge of each, thick and strong, where it joins its fellow, and sends a spine backwards, to be fixed to the partition of the nose.
- b, b,* The cavity which forms part of the arch of the nose.

FIG. 3.

The Outer Surface of the Left Os UNGUIS.

- a,* The lacrymal process, perforated by numerous holes.
- b,* The orbital process.
- c,* The ridge which separates the processes.

FIG. 4.

The Inner Side of the Os UNGUIS, with Eminences and Cavities which belong to the Ethmoid Cells.

C

FIG.

T A B L E IV. CONTINUED.

FIG. 5.

The Outer Surface of the Right OS MALÆ.

- a*, The superior orbital process.
- b*, The inferior orbital process.
- c*, The internal orbital plate.
- d*, The maxillary process.
- e*, The zygomatic process.
- f*, The external orbital hole.
- g, g*, The under and outer edge of the orbit.
- h*, Part of the inner rough surface of the maxillary process.
- i*, The zygomatic notch.

FIG. 6.

The Inner Surface of the same OS MALÆ.

- a, b, c, d, e*, as in Fig. 5.
- f*, The internal fossa, and situation of the external orbital hole.
- g, g*, Rough edge which joins the os malæ to the superior maxillary bone at the external orbital future.

FIG. 7.

The Outer Side of the Right Superior MAXILLARY BONE, with a small Portion of the OS ALATI.

- a*, The maxillary fossa.
- b*, The nasal process of the maxillary bone.
- c*, Inequalities, by which it is joined to the os frontis.
- d*, The angle which is joined to the under end of the os nasi, and to the cartilage of the nose.
- e*, The orbital plate.
- f*, The edge of the orbit.

T A B L E IV. CONTINUED.

- g, A groove which belongs to the infra-orbital canal.
 h, h, i, i, The malar process.
 k, k, The alveolar process.
 l, The maxillary tuberosity.
 m, A small portion of the os palati.
 n, n, Small holes which penetrate the bone.
 o, The fore-part of the nostril.
 p, The nasal spine, forming part of the partition of the nose.
 q, The palate plate.
 r, The foramen infra-orbitarium.
 s, s, The two dentes incisores.
 t, The dens caninus.
 u, u, The five dentes molares.

F I G. 8.

*The Inner Surface of the SUPERIOR MAXILLARY, and
of the PALATE BONES.*

- a, The nasal process, or upper angle.
 b, The middle angle at the base of the nasal process.
 c, Inequalities, where the fore-part of the os spongiosum inferius is fixed.
 d, The palate process.
 e, The alveolar process.
 f, The irregular surface of the palate process, which joins its fellow of the opposite side.
 g, The maxillary sinus.
 h, Small cells in the upper part of the bone.
 i, The lacrymal fossa.
 k, The palate fissure, which assists in forming the foramen incisivum.

T A B L E IV. CONTINUED.

- l*, The future which unites this bone to the os palati.
- m*, The part of the bone which forms the largest share of the nasal fossa.
- n*, The nasal spine.
- o*, Rough surface, where the fore-part of the bone joins its fellow.
- p*, The palate bone.
- q*, The small sinus commonly found in this bone.
- r*, The nasal lamella of the palate bone, forming part of the maxillary sinus, and of the cavity of the nostril.
- s*, An eminence, where this bone is connected to the inferior spongy one.
- t*, The rough surface, where the two palate bones unite.
- u*, The hole proper to this bone.
- v*, The foramen gustativum, or palatinum posterius.
- w*, The pterygoid process.
- x, x*, The teeth.

F I G. 9.

The Posterior, and almost the whole of the External Surface of the Left Os PALATI.

- a*, The palate plate.
- b*, The pterygoid process.
- c*, The nasal plate.
- d*, The orbitar process.
- e*, A small sinus, corresponding with those of the ethmoid bone.
- f*, The notch which forms part of the foramen sphenopalatinum.
- g*, A small hole which penetrates the bone.

b, Part

T A B L E IV. CONTINUED.

b, Part of the groove which helps to form the foramen gustativum.

FIG. 10.

The Anterior, and almost all the External Surface of the same PALATE BONE.

- a*, A notch which assists in forming the foramen gustativum.
- b*, The orbitar process.
- c*, The palate plate.
- d*, The nasal plate.
- e*, The groove which helps to form the foramen gustativum.
- f*, The pterygoid process.

FIG. 11.

The External Concave Surface of the Os SPONGIOSUM INFERIUS of the Left Side.

- a*, The under edge of the bone turning outwards.
- b*, The upper edge, sending down a hook-like plate, to cover a portion of the maxillary sinus.
- c*, The broad anterior extremity, where the connection is chiefly made with the superior maxillary bone.
- d*, The posterior extremity, narrow, and irregular in its surface.
- e*, The external surface, with numerous small holes, which mark its porosity.
- f*, The part which joins the os unguis, to form a share of the lacrymal groove.

FIG. 12.

The Inner Convex Surface of the same Os SPONGIOSUM INFERIUS, which, like the External Surface, is also of a spongy texture.

FIG.

TABLE IV. CONTINUED,

FIG. 13.

The Left Side of the VOMER.

- a*, The hollow surface, which receives the processus azygos of the sphenoid bone.
- b*, The anterior and upper edge, which is connected to the nasal plate of the œthmoid bone, and middle cartilage of the nose.
- c*, The inferior edge, which is connected to the palate plates of the superior maxillary and palate bones.
- d*, A ridge upon the side of the vomer.

FIG. 14.

The LOWER JAW, viewed from the Right Side,

- a*, The symphysis of the jaw.
- b, b*, Muscular prints.
- c*, Another depression, which marks the middle of the chin.
- d*, The base of the jaw.
- e*, The angle of the right side.
- f*, The inner surface of the angle of the left side.
- g*, The ascending plate, with muscular prints.
- b, b*, The coronoid, and,
- i, i*, The condyloid processes.
- k, k*, The cervix on each side.
- l, l*, Semilunar notches between the processes.
- m*, The posterior maxillary foramen.
- n*, The anterior maxillary foramen.
- o*, The alveoli of the teeth.
- p*, The two dentes incisores of the right side.
- q*, The dens caninus.
- r*, The five dentes molares.

FIG.

T A B L E IV. CONTINUED.

FIG. 15.

The TEETH.

- b*, 1. The base or body of the tooth, covered with enamel.
- 2. The root, or fang, destitute of enamel.
- 3. The neck, or collar.
- b*, Sections of two teeth, to shew the extent of the enamel, with the direction of its fibres—The fibrous and lamellated structure of the osseous part—The internal cavity for containing the pulp.
- a*, A fore and back view of the incisores of the under jaw.
- b*, The similar teeth of the upper jaw.
- c*, A fore and back view of the dentes canini.
- d*, The two small molares.
- e*, The three large molares.

FIG. 16.

The Left Portion of the Base of the SKULL, divided from the Septum Narium, by a perpendicular Section, proceeding in a straight line from before backwards.

- a*, Part of the frontal bone.
- b*, The posterior lamina, called vitrea.
- c*, The frontal sinus.
- d*, Part of the transverse suture, dividing the frontal from the superior maxillary bone.
- e*, Part of the frontal bone, contiguous to the os œthmoides.
- f*, The upper part of the œthmoid bone.
- g, g*, The cells of the œthmoid bone, the anterior of which are entire, the rest laid open.
- h, h*, Openings of the œthmoid cells into the nose.
- i*, The uppermost passage of the nostril.

k, The

T A B L E IV. CONTINUED.

- k*, The left anterior clinoid process of the sphenoid bone.
l, The posterior clinoid process.
m, The fella Turcica.
n, The left sphenoid sinus.
o, The part where the sinus opens into the upper and back part of the nose.
p, A section of the body of the sphenoid, and of the cuneiform process of the occipital bone.
q, Spinous process of the sphenoid bone.
r, The internal pterygoid plate.
s, The fore-part of the meatus auditorius.
t, The superior condyloid foramen.
u, The mastoid process of the temporal bone.
v, The inner side of the occipital bone.
w, The cut edge of that bone.
x, The under and outer part of that bone.
y, The nasal process of the superior maxillary bone.
z, The inner side of that bone, forming the middle passage of the nostril.
1, Part of the same bone, which forms the beginning of the lower passage of the nostril.
2, A section of the alveolar process.
3, A section of the osseous palate.
4, The os spongiosum superius.
5, The middle passage of the nostril.
6, The opening of the antrum maxillare.
7, The os spongiosum inferius.
8, That part of the inferior spongy bone which lies over the opening of the lacrymal duct.
9, The lowest passage of the nostril.

FIG.

T A B L E IV. CONTINUED.

FIG. 17.

A View of the Inner Surface of the Base of the CRANIUM.

- a*, The zygoma.
b, The mastoid process of the temporal bone.
c, The external surface of the occipital bone.
d, d, The frontal fossæ marked by the brain.
e, Part of the frontal spine.
f, The foramen cæcum, placed at the bottom of the frontal spine.
g, The cribriform plate of the œthmoid bone.
h, The crista Galli of this bone.
i, The sella Turcica of the sphenoid bone.
k, k, The anterior clinoid processes.
l, The posterior clinoid process.
m, Small process of the sphenoid bone, fixed to the œthmoid one.
n, n, Part of the sphenoid future.
o, The processus semi-olivaris.
p, p, The temporal fossæ.
q, q, The transverse spinous processes.
r, r, The foramina optica.
s, s, A small portion of the foramina laccra.
t, t, The foramina rotunda.
u, u, The foramina ovalia.
v, v, The foramina spinalia.
w, w, Impressions made by the internal carotid arteries.
x, x, Points of the partes petrosæ of the temporal bones, and, before these, irregular openings, which in the subject are filled, partly by bone, and partly by a ligamentous substance.

D

y, y, Suture

TABLE IV. CONTINUED.

- 3, 3, Suture common to the sphenoid and temporal bones.
 1, 1, Squamous parts of the temporal bones, which complete,
 2, 2, The temporal fossæ for the lateral lobes of the brain.
 3, 3, Ridge of the pars petrosa on each side, to which the tentorium is fixed.
 4, 4, Posterior surface of the pars petrosa on each side, which is opposed to the cerebellum.
 5, The foramen innominatum.
 6, The groove which lodges the superior petrosal sinus.
 7, 7, The meatus auditorii interni.
 8, 8, The foramina lacera common to the temporal and occipital bones.
 9, 9, The fossæ for lodging the lateral sinuses.
 10, The cuneiform process of the occipital bone.
 11, 11, The anterior condyloid foramina of that bone.
 12, The foramen magnum.
 13, 13, The inferior occipital fossæ, which lodge the corresponding lobes of the cerebellum.
 14, The inferior limb of the cruciform spine, to which the falx minor is fixed.
 15, Part of the lambdoid suture.
 16, 16, The fossæ for the inferior petrosal sinuses.
 17, 17, The cut edge of the skull.

FIG. 18.

Represents the Outer and Under Surface of the SKULL, turned a little to the Left Side.

- a, The parietal bone.
 b, The lambdoid suture.
 c, c, The large transverse arched ridge of the occipital bone.
 d, d, The

T A B L E IV. CONTINUED.

- d, d*, The smaller transverse ridge, with muscular prints on each side of it.
- e*, Spinous tuberosity, seen in some skulls only.
- f*, The perpendicular spine.
- g*, The foramen magnum.
- h*, The cuneiform process.
- i, i*, The articular or condyloid processes.
- k, k*, The posterior condyloid foramina.
- l*, The squamous portion of the temporal bone.
- m*, The squamous suture.
- n, n*, The mastoid processes.
- o, o*, The mastoid fissures.
- p*, The foramen mastoideum.
- q*, The zygoma and zygomatic suture.
- r*, The glenoid cavity at the root of the zygoma, for the articulation of the lower jaw.
- s, s*, The styloid processes, behind the roots of which the foramina stylo-mastoidea are concealed.
- t*, The meatus auditorius externus.
- u, u*, The foramina carotica.
- v, v*, The jugular fossæ.
- w, w*, The pterygoid fossæ, at the sides of which are the pterygoid plates.
- x*, The temporal process of the sphenoid bone.
- y*, The spinous process and spinous hole of that bone.
- z, z*, The osseous mouths of the Eustachian tubes.
- 1, 1, The foramina ovalia.
- 2, 2, Passages common to the occipital, temporal, and sphenoid bones.
- 3, 3, Foramina pterygoidea.
- 4, The inferior orbital fissure.

T A B L E IV. CONTINUED.

- 5, The under part of the tuber or bulge of the superior maxillary bone.
- 6, 6, The inner sides of the ossa malarum.
- 7, 7, The superior and inferior spongy bones, with a view of the back-part of the nostrils.
- 8, The posterior edge of the vomer.
- 9, 9, The palate plates of the superior maxillary bones, with the longitudinal palate suture.
- 10, 10, The palate plates of the palate bones, with the transverse, and continuation of the longitudinal palate sutures.
- 11, 11, The foramina gustativa, or posterior palate holes.
- 12, The foramen incisivum, or anterior palate hole.
- 13, 13, The teeth, divided into two incisores, one caninus, two small molares, and three large molares on each side,

FIG. 19.

The Os HYOIDES, seen from the Upper and Fore Part,

- a*, The body of the os hyoides.
- b, b*, Its cornua.
- c, c*, Its appendices.

Fig. 1.



Fig. 2.

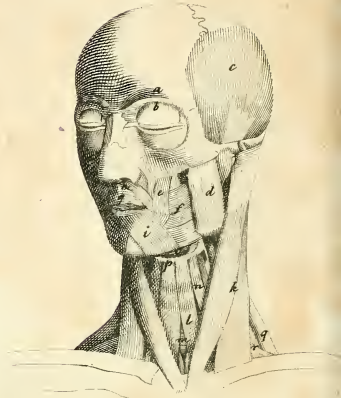


Fig. 3.

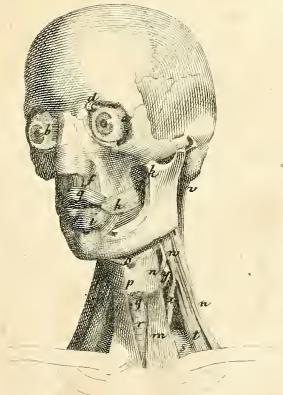
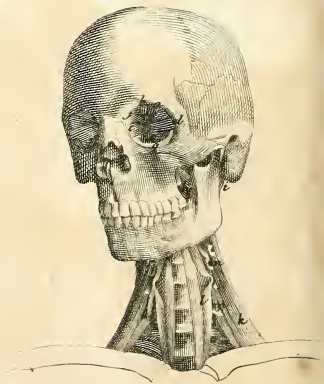


Fig. 4.



T A B L E V.

REPRESENTS the MUSCLES situated on the Fore-
part of the HEAD and NECK.

FIG. I.

*The First Order of MUSCLES on the Fore-part of the HEAD
and NECK, after the Integuments have been removed.*

- a*, The frontal part of the occipito-frontalis.
- b*, The tendon of that muscle.
- c*, A fleshy slip descending from the occipito-frontalis over
the root of the nose.
- d*, The attollens aurem.
- e*, The anterior auris.
- f*, The orbicularis palpebrarum.
- g*, The ciliary part of the orbicularis.
- h*, The compressor naris.
- i*, The levator labii superioris alæque nasi.
- k*, The zygomaticus minor.
- l*, The zygomaticus major.
- m*, The levator anguli oris.
- n*, The cartilage of the nose.
- o*, The depressor anguli oris.
- p*, The depressor labii inferioris.
- q*, The buccinator.
- r*, The orbicularis oris.
- s*, The masseter.
- t*, The platysma myoides, its upper end passing over the jaw.
- u*, The sterno-cleido-mastoideus.

FIG.

TABLE V. CONTINUED.

FIG. 2.

The Second Order of MUSCLES on the Fore-part of the HEAD and NECK.

- a*, The corrugator supercilii.
- b*, The levator palpebræ superioris.
- c*, The temporalis, the tendon of which is seen passing under the zygoma.
- d*, The masseter.
- e*, The levator anguli oris.
- f*, The buccinator.
- g*, The orbicularis oris.
- h*, The nasalis labii superioris, at the upper side of which is a portion of the depressor labii superioris alæque nasi.
- i*, The depressor labii inferioris.
- k*, The sterno-cleido-mastoideus.
- l*, The sterno-hyoideus.
- m*, Part of the trachea.
- n*, The omo-hyoideus.
- o*, The hyo-thyroideus.
- p*, The os hyoides.
- q*, The levator scapulæ.
- r*, The scalenus medius.

FIG. 3.

The Third Order of MUSCLES on the Fore-part of the HEAD and NECK.

- a*, The insertion of the abductor oculi.
- b*, The adductor oculi of the right side.
- c*, The insertion of the levator oculi.

d, The

T A B L E V. CONTINUED.

- d*, The trochlea, and part of the tendon of the obliquus superior.
e, The obliquus inferior.
f, The depressor labii superioris et alæ nasi.
g, The orbicularis oris.
h, The buccinator.
i, The levator labii inferioris.
k, Part of the pterygoideus externus.
l, Part of the pterygoideus internus.
m, The sterno-thyroideus.
n, The thyro-hyoides.
o, The os hyoides.
p, The thyroid cartilage.
q, The cricoid cartilage, with the two crico-thyroid muscles arising from it.
r, The trachea.
s, Part of the pleura.
t, The scalenus anticus.
u, The scalenus medius.
v, A portion of the trachelo-mastoideus.
w, The rectus capitis anterior major.
x, The longus colli.
y, The constrictor pharyngis inferior.

FIG. 4.

The Fourth Order of MUSCLES on the Fore-part of the HEAD and NECK.

- a*, The levator palpebræ superioris.
b, The levator oculi.
c, The adductor oculi.

d, The

T A B L E V. CONTINUED.

- d*, The abductor oculi.
- e*, The depressor oculi.
- f*, The obliquus superior.
- g*, The obliquus inferior.
- h*, The pterygoideus internus.
- i*, The obliquus superior capitis.
- k*, The scalenus medius.
- l*, The longus colli.
- n, m*, The intertransversales colli.

TAB. VI.

Fig. 1.



Fig. 2.

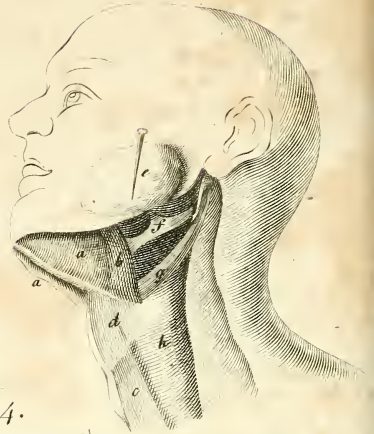


Fig. 4.

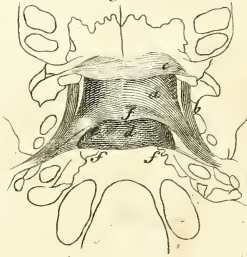


Fig. 3.



Fig. 5.

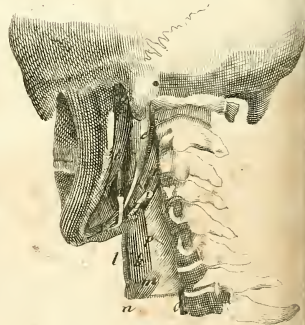
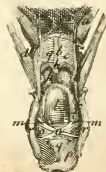


Fig. 6.



Fig. 7.



T A B L E VI.

REPRESENTS the MUSCLES situated about the
THROAT.

FIG. 1.

Part of the Muscles of the Os HYOIDES.

- a*, Part of the maffeter.
- b*, The posterior head of the digastric.
- c*, Its anterior head.
- d*, The stylo-hyoideus, with the tendon of the digastric passing through it.
- e, e*, The sterno-hyoidei.
- f*, The omo-hyoideus.
- g*, The pharynx.
- h*, The submaxillary gland.

FIG. 2.

MUSCLES deeper seated than the former.

- a, a*, The mylo-hyoidei.
- b*, The hyo-glossus.
- c*, The sterno-thyroideus.
- d*, The thyro-hyoideus.
- e*, The submaxillary gland, raised from its place behind the angle of the lower jaw.
- f*, The stylo-glossus, supported by a ligament.
- g*, The stylo-pharyngeus.
- h*, The pharynx.

E

FIG.

TABLE VI. CONTINUED.

FIG. 3.

MUSCLES deeper seated than the former.

- a*, The genio-hyoideus.
- b*, The genio-hyo-glossus.
- c*, The stylo-glossus, with its supporting ligament.
- d*, The stylo-pharyngeus.
- e*, The submaxillary gland, raised, by which its duct is seen advancing towards its termination at the side of the frænum linguæ.
- f*, The sublingual gland.
- g*, The os hyoides.
- h*, The thyroid cartilage.
- i*, The cricoid cartilage, with the crico-thyroid muscles.
- k*, The thyroid gland.
- l*, The trachea.
- m*, The pharynx.

FIG. 4.

Muscles of the PALATE, viewed on the Under Side.

- a*, The levator palati.
- b, c*, The circumflexus palati; *c*, Its tendon passing over the hook-like process of the pterygoid plate.
- d*, The membrane of the palate.
- e, e*, The mouths of the Eustachian tubes.
- f, f, f*, The circumference from which the membrane of the palate is cut off.

FIG. 5.

A Lateral View of the MUSCLES, seated under the HEAD, and before the Vertebra of the NECK.

- a*, The pterygoideus externus.

b, The

T A B L E IV. CONTINUED.

- b*, The pterygoideus internus.
- c*, The mylo-hoideus.
- d*, The stylo-hyoideus.
- e, f*, The digastricus.
- g, h*, The hyo-glossus.
- i*, The os hyoides.
- k*, The thyro-hyoideus.
- l*, The thyroid cartilage.
- m*, The crico-thyroideus.
- n*, The cricoid cartilage.
- o*, A section of the œsophagus.
- p*, The constrictor pharyngis inferior.
- q*, The constrictor pharyngis medius.
- r*, The constrictor pharyngis superior.

FIG. 6.

A Back-View of the PHARYNX, with the Under Part of the BONES of the HEAD, to which the Pharynx is fixed.

- a*, The upper point of the constrictor pharyngis inferior.
- b*, The under end of the pharynx, and inner transverse fibres of the œsophagus.
- c, c*, The outer fibres of the œsophagus, descending obliquely backwards on each side.
- d*, A section of the œsophagus.
- e, e*, A section of the trachea.
- f*, The extremities of the cornua of the os hyoides, with the ligaments which join them to the superior cornua of the thyroid cartilage.
- g, g*, The constrictor pharyngis medius, on each side.
- h, h*, The constrictor pharyngis superior, on each side.

T A B L E VI. CONTINUED.

- i*, The naked membrane of the pharynx.
k, k, The stylo-pharyngeus, on each side.
l, l, The styloid processes of the temporal bones.
m, m, The pterygoid processes of the sphenoid bone.
n, n, The backmost tooth of the upper and under jaws, on each side.

F I G. 7.

The MUSCLES lying immediately under the MEMBRANE of the PHARYNX, which, with the ŒSOPHAGUS and TRACHEA, are removed.

- a*, The levator palati.
b, The azygos uvulæ.
c, The palato-pharyngeus.
d, The part of it which passes under the levator palati.
e, That part of it, called by ALBINUS *Salpingo Pharyngeus*.
f, Part of the common end of the palato-pharyngeus and stylo-pharyngeus.
g, The posterior edge of the velum palati.
h, The uvula.
i, The tonsil, projecting before the palato-pharyngeus muscle.
k, The tongue.
l, The epiglottis.
m, m, The points of the arytenoid cartilages.
n, The arytenoideus obliquus.
o, o, The arytenoideus transversus.
p, The crico-arytenoideus posticus.
q, The cricoid cartilage.
r, The posterior edge of the thyroid cartilage, which conceals the two small muscles termed *Crico-arytenoideus Lateralis* and *Thyro-arytenoideus*.



TAB.VII.

Fig. 1.

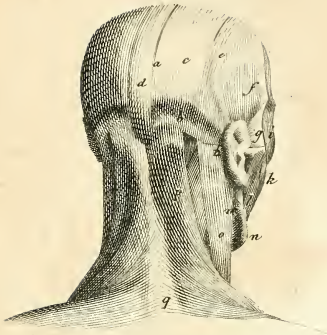


Fig. 2.

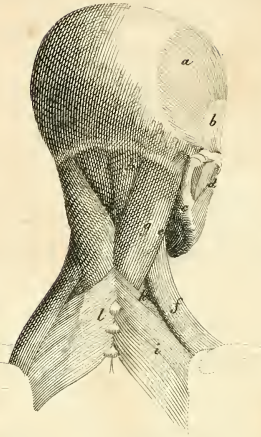
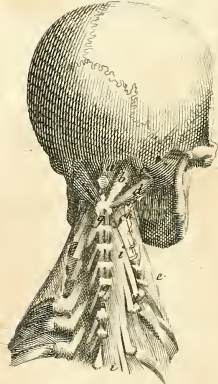


Fig. 3.



Fig. 4.



T A B L E VII.

REPRESENTS the MUSCLES situated on the BACK-PART of the HEAD and NECK.

FIG. I.

The First Order of MUSCLES on the Back-part of the HEAD and NECK, after the Integuments have been removed.

- a*, The occipital part of the occipito-frontalis muscle.
- b*, The fleshy, and,
- c*, The tendinous part of this muscle.
- d*, A tendinous membrane, joining the opposite sides of the muscle.
- e*, Part of the tendinous membrane, covering the upper part of the temporal muscle.
- f*, The attollens aurem.
- g*, The anterior auris.
- h*, A small portion of the retrahentes auris.
- i*, The back-part of the orbicularis palpebrarum.
- k*, The zygomaticus major.
- l*, The masseter.
- m*, The pterygoideus internus.
- n*, The platysma myoides.
- o*, The sterno-cleido-mastoideus.
- p*, The upper end of the trapezius.
- q*, The tendinous portion of that muscle, in the nape of the neck, called *Ligamentum Nuchæ*.

FIG.

TABLE VII. CONTINUED.

FIG. 2.

The Second Order of MUSCLES on the Back-part of the HEAD and NECK.

- a*, The temporalis, its aponeurosis being removed.
- b*, The tendon of the temporal muscle, passing under the zygoma.
- c*, The pterygoideus internus.
- d*, The masseter.
- e*, The mylo-hyoideus.
- f*, The levator scapulæ.
- g*, The splenius.
- h*, The upper end of the complexus.
- i*, A portion of the rhomboides major.
- k*, Part of the rhomboides minor.
- l*, The upper end of the serratus posticus superior.

FIG. 3.

The Third Order of MUSCLES on the Back-part of the HEAD and NECK.

- a*, The back-part of the buccinator.
- b*, The pterygoideus internus.
- c*, The mylo-hyoideus.
- d, e, f*, The complexus; *f*, A fleshy slip from the spinous process of the first dorsal vertebra.
- g*, The trachelo-mastoideus.
- h*, The scalenus medius.
- i*, The scalenus posticus.
- k*, The semi-spinalis colli.
- l*, Interspinales colli.

m, Obliquus

T A B L E VII. CONTINUED.

- m*, Obliquus capitis superior.
n, Transversalis colli.
o, The upper end of the longissimus dorsi, joining the trachelo-mastoideus and cervicalis descendens.
p, The fleshy slip from the sacro-lumbalis, called *Cervicalis Descendens*.

FIG. 4.

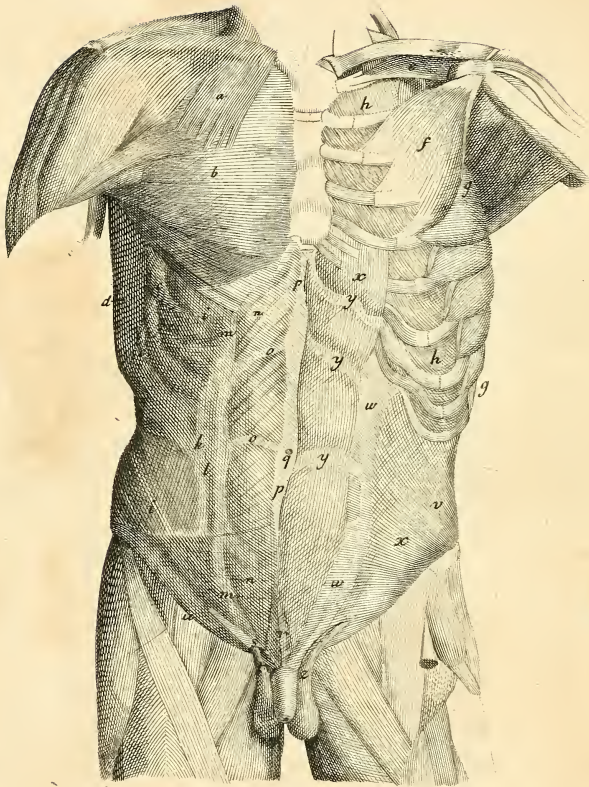
The Fourth Order of MUSCLES on the Back-part of the HEAD and NECK.

- a*, The rectus capitis posterior minor.
b, The rectus capitis posterior major.
c, The obliquus capitis superior.
d, The obliquus capitis inferior.
e, The scalenus medius.
f, The upper end of the multifidus spinæ.
g, g, The interspinales colli.
h, h, The intertransversales colli.
i, i, The semispinalis colli.





TAB. VIII.



T A B L E VIII.

REPRESENTS MUSCLES on the Fore-part of the TRUNK of the BODY.—On the Right Side, the MUSCLES are exposed which lie immediately under the Common Integuments.—On the Left Side, the MUSCLES are seen which are placed under the former.

THORAX.

- a*, The under end of the platysma myoides.
- b*, The pectoralis major, with the deltoides at the outer side of it.
- c, c*, Part of the serratus magnus.
- d*, The edge of the latissimus dorsi.
- e*, The subclavius.
- f*, The pectoralis minor.
- g, g*, The serratus magnus. Farther out, the subscapularis is seen.
- h, h*, The intercostales interni, the tendinous fascia being removed.

ABDOMEN.

- i, i*, The obliquus descendens externus.
- k*, The beginning of the tendon of that muscle.
- l*, The obliquus internus, shining through the tendon of the obliquus externus.
- m, m*, The linea femilunaris.
- n, n*, The rectus abdominis, also shining through the tendon of the obliquus externus.

T A B L E VIII. CONTINUED.

- o, o, The tendinous interfections of the rectus.
- p, p, The linea alba.
- q, The umbilicus.
- r, The pyramidales.
- s, The ring of the external oblique muscle, transmitting the spermatic cord.
- t, The cremaster muscle, covering the spermatic cord.
- u, The lower edge of the external oblique muscle, termed *Ligament of POUPART*.
- v, The obliquus internus ascendens.
- w, w, The tendon of the obliquus internus, part of which is left covering the outer edge of the rectus muscle. Between v and w the tendon splits into two layers, which inclose the rectus. From w to the pubis the whole of the tendon goes before the rectus.
- x, x, The rectus abdominis.
- y, y, y, The tendinous interfections of the rectus.
- z, The cremaster testis.

Fig. 1.



Fig. 2.

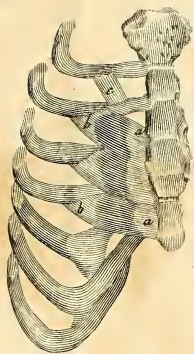


Fig. 3.

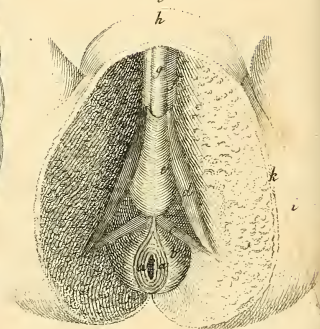


TABLE IX.

REPRESENTS the Third Layer of MUSCLES on the Right, and the Fourth Layer of MUSCLES on the Left Side of the Anterior Part of the TRUNK of the BODY.

FIG. I.

THORAX.

- a*, The intercostales externi.
- b, b, b, b*, The intercostales interni.
- c, c*, The convex or thoracic side of the diaphragm.
- d*, Its middle tendon.
- e, f, g, h*, The fleshy origins of the diaphragm, separated from the inferior margin of the thorax.

ABDOMEN.

- i*, The transversalis abdominis.
- k*, That portion of the tendons of the internal oblique and transverse muscles, which lie behind the rectus.
- l*, The remains of the tendons of the oblique and transverse muscles, forming the linea alba.
- m*, The spermatic vessels, passing under the edge of the transverse muscle.
- n*, The peritoneum, marked by one of the umbilical arteries and the urachus.
- o*, The tendinous crura of the inferior muscle of the diaphragm.
- p*, The passage for the aorta, between the crura.
- q, q*, The fleshy heads of the small muscle of the diaphragm.
- r*, The part where the fibres of the fleshy heads of the opposite sides cross each other, to form,

T A B L E IX. CONTINUED.

- s*, A passage for the œsophagus.
t, The origin of the diaphragm from the twelfth rib.
u, The psoas parvus.
v, v, The psoas magnus.
w, The iliacus internus.
x, A section of the penis, in which the corpora cavernosa appear.

F I G. 2.

A View of the Inner Surface of the STERNO-COSTALIS MUSCLE.

- a, a*, The tendinous origin, from the cartilago ensiformis and under half of the middle bone of the sternum.
b, b, The tendinous insertion into the third, fourth, and fifth ribs.
c, Part of the sterno-costalis, passing between the second and third ribs, and which is found in some subjects only.

F I G. 3.

MUSCLES about the Root of the PENIS, and Under End of the INTESTINUM RECTUM,—in a Child.

- a, a*, The sphincter ani.
b, The levator ani.
c, The transversalis perinei.
d, The erector penis.
e, The accelerator urinæ.
f, The corpus cavernosum penis.
g, The corpus spongiosum urethræ.
h, The scrotum turned up.
i, Part of the thigh.
k, The cut edge of the integuments.



TAB. X.



T A B L E X.

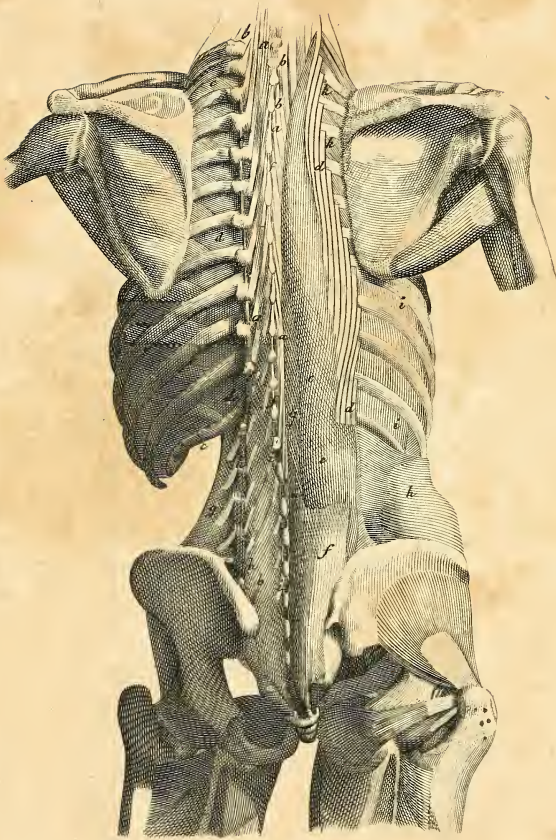
REPRESENTS the First Layer of MUSCLES on the Right, and Second Layer of MUSCLES on the Left Side of the Back-Part of the TRUNK of the BODY.

RIGHT SIDE.

- a, a,* The thoracic portion of the trapezius.
- b, b,* Its insertion into the spine of the scapula.
- c,* The ligamentum Nuchæ.
- d, d,* The latissimus dorsi.
- e,* Its tendinous origin.
- f,* Part of the obliquus externus abdominis.
- g,* Part of the rhomboideus.

LEFT SIDE.

- b,* The rhomboides major, and,
- i,* The rhomboides minor, covering the ferratus posticus superior.
- k,* The ferratus posticus inferior.
- l,* The part from which the latissimus dorsi was cut.
- m,* The under part of the ferratus magnus.
- n,* The tendons of the sacro-lumbalis.
- o,* A portion of the longissimus dorsi.
- p,* Part of the semi-spinalis dorsi.
- q,* The spinalis dorsi.
- r,* The broad tendon common to the latissimus dorsi and ferratus posticus inferior.
- s,* The back-part of the obliquus internus abdominis.]
- t, t,* The intercostales externi.
- u,* The coccygeus.
- v,* The levator ani.
- w,* The sphincter ani.



T A B L E XI.

REPRESENTS the Third Layer of MUSCLES on the Right, and Fourth Layer of MUSCLES on the Left Side of the Back-part of the TRUNK of the Body.

RIGHT SIDE.

- a, a, a,* The spinalis dorſi.
- b, b,* Part of the ſemi-ſpinalis dorſi.
- c,* The longiſſimus dorſi.
- d, d,* The tendons of the ſacro-lumbalis.
- e,* The common fleſhy head of the longiſſimus dorſi and ſacro-lumbalis.
- f,* Tendon covering and partly giving origin to this fleſhy head.
- g,* Part of this tendon upon the longiſſimus dorſi.
- h,* The tranſverſalis abdominis.
- i, i,* The intercoſtales externi.
- k, k,* Portions of the intercoſtales externi, called by ALBINUS, *Levatores Coſtarum.*

LEFT SIDE.

- a, a,* The ſemi-ſpinalis dorſi.
- b, b,* The multifidus ſpinæ.
- c, c,* The intercoſtales interni.
- d, d,* The pleura.
- e, e,* The intertranſverſales dorſi.
- f, f,* Interſpinales dorſi.
- g,* Quadratus lumborum.
- h, h,* Intertranſverſales lumborum.
- i, i,* Interſpinales lumborum.

1852

Received of the Treasurer of the
County of ... the sum of ...
for ...

Witness my hand and seal this ...
day of ... 1852

Attest my hand and seal this ...
day of ... 1852

By ...
County Clerk

By ...
Treasurer

By ...
County Clerk

By ...
Treasurer



Fig. 3.

Fig. 1.

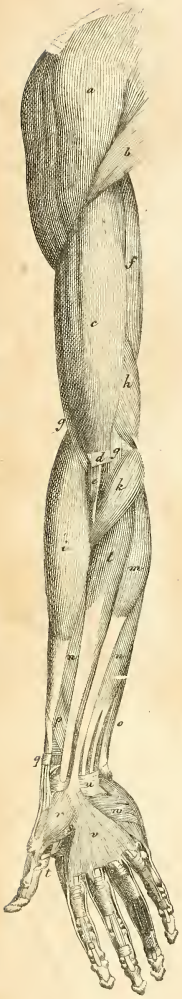


Fig. 2.

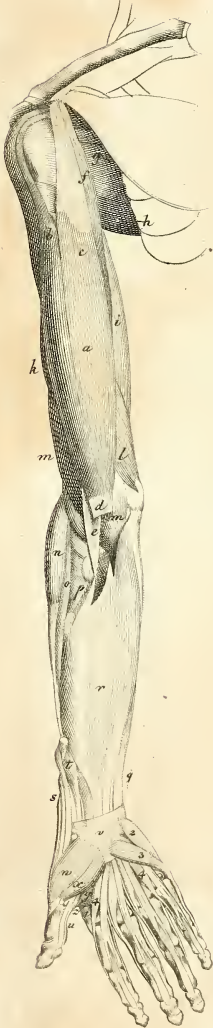


Fig. 4.



T A B L E XII.

REPRESENTS the MUSCLES situated on the FORE-
PART of the SUPERIOR EXTREMITY.

FIG. I.

*A View of the First Layer of MUSCLES on the Fore-part of
the SUPERIOR EXTREMITY, the Integuments and Aponeu-
rosis being removed.*

- a*, The deltoides.
- b*, The insertion of the pectoralis major.
- c*, The biceps flexor cubiti.
- d*, The aponeurosis of the biceps cut off.
- e*, The round tendon of the biceps.
- f*, The long head of the triceps extensor cubiti.
- g, g*, The brachialis internus.
- h*, The third head of the triceps, called *Brachialis Externus*.
- i*, The supinator radii longus.
- k*, The pronator radii teres.
- l*, The flexor carpi radialis.
- m*, Palmaris longus.
- n, n*, Part of the flexor digitorum sublimis.
- o*, The under end of the flexor carpi ulnaris.
- p*, Part of the flexor longus pollicis.
- q*, The tendons of the extensores ossis metacarpi et primi inter-
nodii pollicis, with their annular ligament.
- r*, Abductor pollicis, at the outer edge of which is a small
portion of the flexor ossis metacarpi pollicis.
- s*, That portion of the abductor pollicis, called by ALBINUS
Abductor Brevis Alter.
- t*, Tendon of the flexor longus pollicis, bound by a ligament.

T A B L E XII. CONTINUED.

- u*, The ligamentum carpi annulare anterius.
- v*, The aponeurosis palmaris, extending from the annular ligament of the wrist to the transverse ligaments at the roots of the fingers, and the adjacent edges of the metacarpal bones.
- w*, The palmaris brevis, covering part of the abductor, and flexor parvus minimi digiti.

Upon the fingers are seen the annular ligaments retaining the tendons of the flexor sublimis, and flexor profundus, in their places.

F I G. 2.

The Second Layer of MUSCLES on the Fore-part of the SUPERIOR EXTREMITY.

- a*, The biceps flexor cubiti.
- b*, Its long head.
- c*, Its short head.
- d*, A section of the aponeurotic tendon of the biceps.
- e*, The round tendon of the biceps.
- f*, Part of the coraco-brachialis.
- g*, The subscapularis.
- h*, The teres major.
- i*, The long head of the triceps extensor cubiti.
- k*, Its short head.
- l*, The brachialis externus of the triceps.
- m, m*, The brachialis internus.
- n*, The extensor carpi radialis longior.
- o*, The extensor carpi radialis brevior.
- p*, The supinator radii brevis.
- q*, Insertion of the flexor carpi ulnaris.

r, The

T A B L E XII. CONTINUED.

- r, The flexor digitorum sublimis; its tendons dividing near their insertion in the second phalanx of the bones of the fingers, for the passage of the tendons of the flexor profundus.
- s, The extensor ossis metacarpi and extensor primi internodii pollicis.
- t, Part of the flexor pollicis longus.
- u, Its tendon.
- v, The ligamentum carpi annulare.
- w, The flexor ossis metacarpi pollicis.
- x, The abductor pollicis brevis alter of ALBINUS.
- y, Part of the flexor brevis pollicis.
- z, Part of the adductor pollicis.
- , The abductor indicis.
- 2, The abductor minimi digiti.
- 3, The flexor parvus minimi digiti.
- 4, 4, The four lumbricales.

F I G. 3.

The Third Layer of MUSCLES on the Fore-Part of the SUPERIOR EXTREMITY.

- a, The subscapularis;
- b, Its tendon.
- c, The teres major;
- d, Its tendon.
- e, The coraco-brachialis.
- f, The brachialis internus.
- g, The brachialis externus of the triceps.
- h, The extensor carpi radialis longior.

T A B L E XII. CONTINUED.

- i*, Part of the extensor carpi radialis brevior.
- k*, The supinator radii brevis.
- l*, The flexor digitorum profundus.
- m*, The tendons of that muscle passing under the ligamentum carpi annulare, to be inserted into the third phalanx of the fingers.
- n*, The ligamentum carpi annulare.
- o, o*, The four lumbricales.
- p*, The flexor longus pollicis.
- q*, A slip which it sometimes receives from the inner condyle of the os humeri.
- r*, The tendon of the flexor longus pollicis inserted into the last joint of the thumb.
- s*, The flexor brevis pollicis.
- t*, The first interosseous muscle of the fore-finger.
- u*, The adductor minimi digiti.

F I G. 4.

The Fourth Layer of MUSCLES on the Fore-part of the SUPERIOR EXTREMITY.

- a*, The subscapularis.
- b*, The supinator radii brevis.
- c*, The pronator radii quadratus.
- d*, The flexor brevis pollicis, with its insertion into the ossa sesamoidea.
- e*, The adductor pollicis.
- f, f*, The seven interossei,—the first placed at the outer side of the metacarpal bone of the fore-finger,—the rest of them between the metacarpal bones.



Fig. 1.

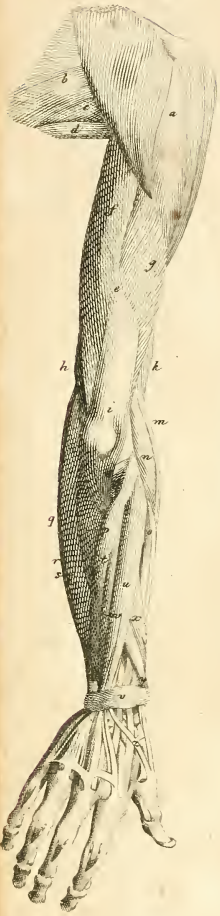


Fig. 3.

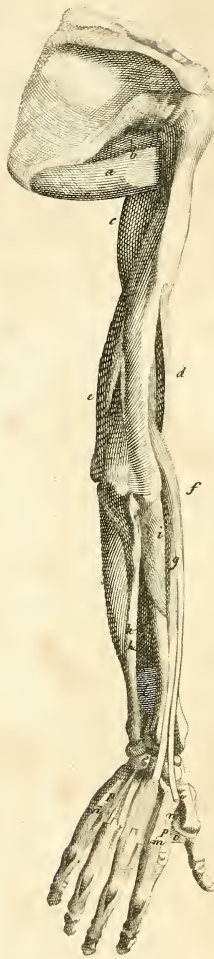


Fig. 2.

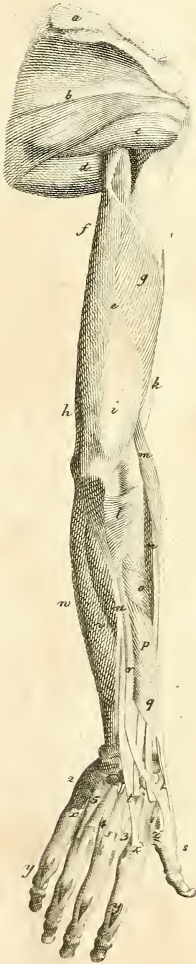
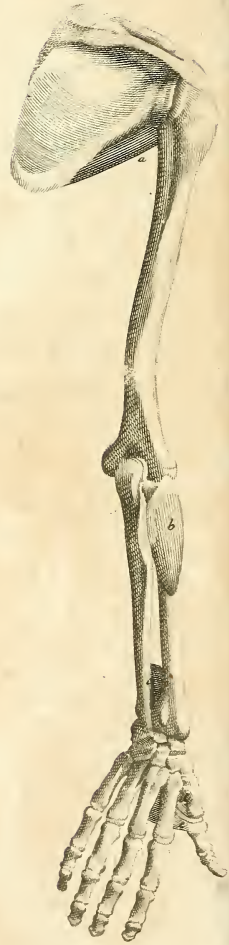


Fig. 4.



T A B L E XIII.

REPRESENTS the MUSCLES on the Back-Part of
the SUPERIOR EXTREMITY.

FIG. I.

*A View of the First Layer of MUSCLES on the Back-Part of the
SUPERIOR EXTREMITY.*

- a*, The deltoides, with its insertion into the os humeri.
- b*, The infra-spinatus.
- c*, The teres minor.
- d*, The teres major.
- e*, The triceps extensor cubiti.
- f*, The long, and,
- g*, The short head of the triceps.
- h*, The third head, called *brachialis externus*.
- i*, The common tendon of the three heads.
- k*, Part of the brachialis internus.
- l*, Part of the anconeus.
- m*, The supinator radii longus.
- n*, The extensor carpi radialis longior.
- o*, The extensor carpi radialis brevior.
- p*, Part of the flexor profundus, which comes from the ulna.
- q*, Part of the palmaris longus.
- r*, Part of the flexor digitorum sublimis.
- s*, The flexor carpi ulnaris.
- t*, The extensor carpi ulnaris.
- u*, Extensor digitorum communis, in which are seen,
Its passage under *v*, the ligamentum carpi annulare posterius ;
The portion *w*, which it sends to the little finger ;
Its flat tendons, running along the metacarpal bones ;
The aponeurotic slips, which join these tendons together
near the first joint of the fingers ;
The tendons upon the back of the fingers, forming broad ex-
panfions

T A B L E XIII. CONTINUED.

pansons which cover and adhere to the first and second, and are inserted into the base of the third, phalanges ; The splitting and rejoining of the tendons, between the first and second phalanges, for facilitating the motion of the joints.

- x*, The extensor ossis metacarpi, and, *y*, The extensor primi internodii pollicis, with their angular ligament.
z, The tendon of the extensor secundi internodii pollicis.

F I G. 2.

The Second Layer of MUSCLES on the Back-Part of the SUPERIOR EXTREMITY.

- a*, The supra-spinatus.
b, The infra-spinatus.
c, The teres minor.
d, The teres major.
e, The triceps extensor cubiti.
f, Its long head.
g, Its short head.
h, Part of the third head, named *brachialis externus*.
i, The common tendon of the triceps inserted into the olecranon.
k, Part of the brachialis internus.
l, The anconeus.
m, The extensor carpi radialis longior.
n, The extensor carpi radialis brevior.
o, The supinator radii brevis.
p, The extensor ossis metacarpi pollicis.
q, The extensor primi internodii pollicis.
r, The extensor secundi internodii pollicis.
s, The conjoined tendons of the three extensors of the thumb.
t, The indicator.
u, The flexor digitorum profundus.
v, The

T A B L E XIII. CONTINUED.

- v*, The flexor carpi ulnaris.
w, A small portion of the flexor sublimis.
x, x, The cut tendons of the extensor digitorum communis.
y, y, Tendinous slips of the extensor communis, fixed to the second phalanx.
z, The adductor pollicis.
1, The abductor indicis.
2, The abductor minimi digiti.
 The posterior interossei, consisting of, *3*, The prior medii digiti, *4*, Posterior medii digiti, and, *5*, Posterior annularis.

F I G. 3.

The Third Layer of MUSCLES upon the Back-Part of the SUPERIOR EXTREMITY.

- a*, The teres major.
b, Part of the subscapularis.
c, Part of the coraco-brachialis.
d, Part of the brachialis internus.
e, The brachialis externus.
f, The extensor carpi radialis longior.
g, The extensor carpi radialis brevior.
h, The flexor profundus perforans.
i, The supinator radii brevis.
k, Part of the flexor longus pollicis.
l, The pronator radii quadratus.
m, m, Cut tendons of the extensor digitorum.
n, Flexor brevis pollicis.
o, Adductor pollicis.
p, p, The interossei interni, with portions of the interossei externi, the rest of the interossei externi being cut off.

At the lateral parts of the roots of the fingers, in this and the

T A B L E XIII. CONTINUED.

two former figures, are seen the joining of the tendons of the extensor digitorum, and of the lumbricales and interossei.

FIG. 4.

A Posterior View of the Fourth Layer of MUSCLES on the SUPERIOR EXTREMITY.

- a*, The subcapularis.
- b*, The supinator radii brevis.
- c*, The pronator radii quadratus.
- d*, The flexor brevis pollicis.
- e*, The adductor pollicis.



Fig. 1.

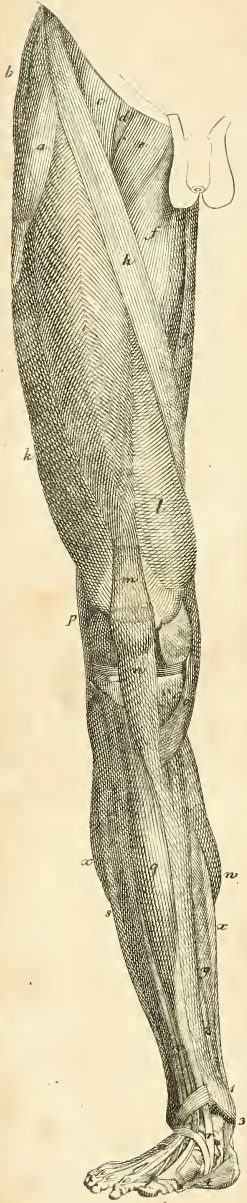


Fig. 2.

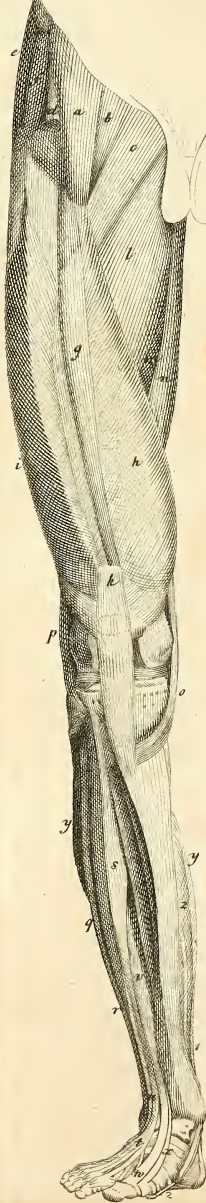


Fig. 3.

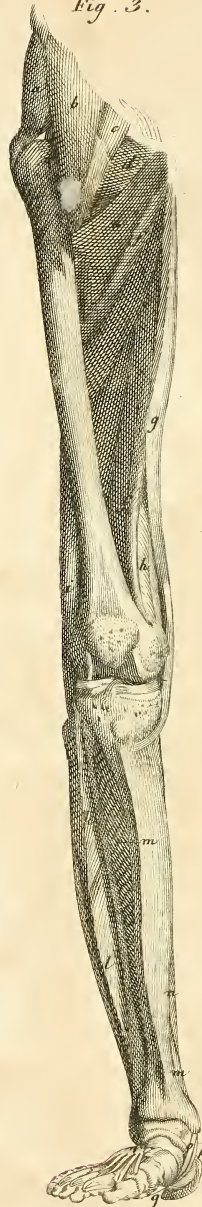
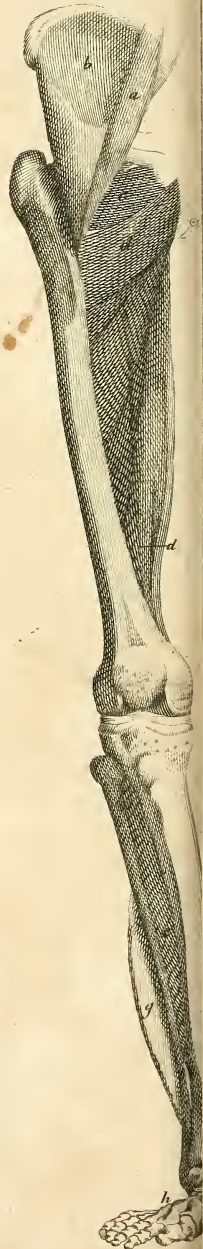


Fig. 4.



T A B L E XIV.

REPRESENTS the MUSCLES on the Fore-Part of the
INFERIOR EXTREMITY.

FIG. 1.

The First Layer of MUSCLES on the Fore-Part of the INFERIOR EXTREMITY.

- a*, The tenor vaginæ femoris.
- b*, The anterior edge of the gluteus medius.
- c*, The under end of the iliacus internus, and of,
- d*, The psoas magnus.
- e*, The pectinalis.
- f*, The adductor longus femoris.
- g*, The gracilis.
- h*, The sartorius.
- i*, The rectus femoris.
- k*, The vastus externus.
- l*, The vastus internus.
- m*, The ligament common to the extensors of the leg, fixed to the patella.
- n*, Ligament fixing the patella to the tibia.
- o*, The tendons of the sartorius, gracilis, and semi-membranosus.
- p*, The under end of the biceps flexor cruris.
- q*, The tibialis anticus;
- r*, Its tendon.
- s*, The peroneus longus.
- t*, The extensor longus digitorum pedis.
- u*, The tendons of the extensor longus.

T A B L E XIV. CONTINUED.

- v*, The extensor proprius pollicis.
- w*, The gastrocnemius externus.
- x, x*, The gastrocnemius internus.
- y*, The flexor longus digitorum pedis.
- z*, The tibialis posticus.
- 1*, The tendo Achillis, and tendon of the plantaris.
- 2*, The upper and under portions of the ligamentum tarfi annulare.
- 3*, Ligaments retaining the tendons at the inner ankle.
- 4*, The abductor pollicis.

F I G. 2.

The Second Layer of MUSCLES on the Fore-Part of the SUPERIOR EXTREMITY.

- a*, The under end of the iliacus internus.
- b*, The under end of the psoas magnus.
- c*, The pectinalis.
- d*, The cut end of the rectus femoris.
- e*, The anterior edge of the gluteus medius.
- f*, The gluteus minimus.
- g*, The cruralis, with its tendinous fascia.
- h*, The vastus internus.
- i*, The vastus externus.
- k*, The cut end of the rectus fixed to the patella.
- l*, The adductor longus femoris.
- m*, A small portion of the adductor magnus.
- n*, The gracilis.
- o*, The tendons of the gracilis and semi-tendinosus.
- p*, The tendon of the biceps flexor cruris.
- q*, The peroneus longus.

r, The

T A B L E XIV. CONTINUED.

- r, The peroneus brevis.
- s, The extensor longus digitorum pedis ;
- t, The tendons of that muscle.
- u, The peroneus tertius.
- v, The extensor proprius pollicis ;
- w, Its tendon ;
- x, A branch of that tendon not constant.
- y, y, The edges of the gastrocnemius internus.
- z, The edge of the flexor longus digitorum pedis.
- 1, The tendons of the tibialis posticus and flexor longus digitorum.
- 2, Part of the flexor brevis digitorum.

FIG. 3.

The Third Layer of MUSCLES on the Fore-part of the INFERIOR EXTREMITY.

- a, The gluteus minimus.
- b, The iliacus internus.
- c, The psoas magnus.
- d, The obturator externus.
- e, The adductor brevis.
- f, f, The adductor magnus.
- g, The gracilis.
- h, The semi-membranosus, with its insertion in the tibia.
- i, The short head of the biceps flexor cruris.
- k, The peroneus longus.
- l, The peroneus brevis.
- m, m, The tibialis posticus, the interosseous ligament being removed.
- n, The flexor longus digitorum pedis.
- o, The tendon of the tibialis posticus.
- p, The tendon of the flexor longus digitorum.

T A B L E XIV. CONTINUED.

q, The tendon of the flexor longus pollicis pedis.

r, The extensor brevis digitorum pedis.

F I G. 4.

*An Anterior View of the Fourth Layer of MUSCLES on the
INFERIOR EXTREMITY.*

a, The psoas magnus.

b, The iliacus internus.

c, The obturator externus.

d, d, The adductor magnus.

e, The tibialis posticus ;

f, Its tendon.

g, The peroneus brevis.

h, The interossei externi.



Fig. 1.

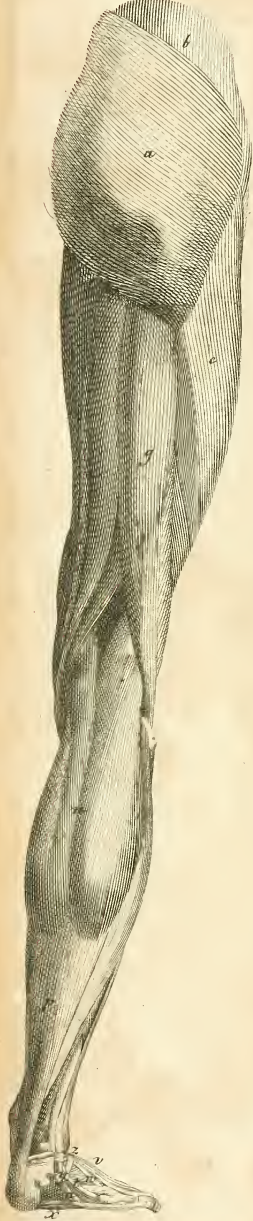


Fig. 2.

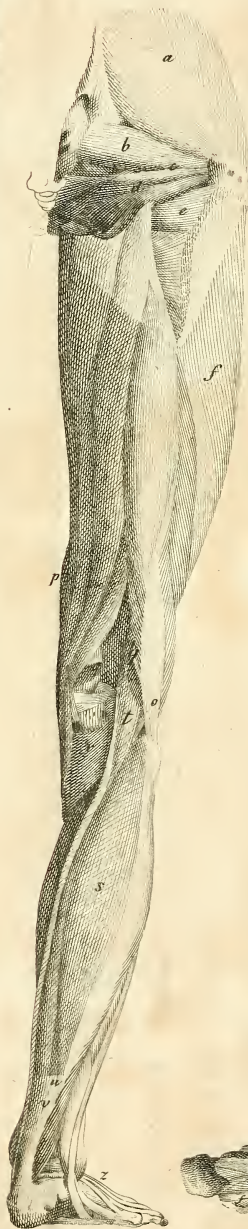


Fig. 3.

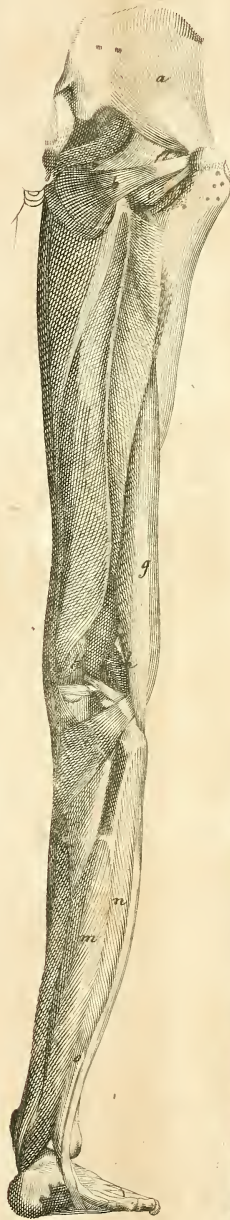


Fig. 4.

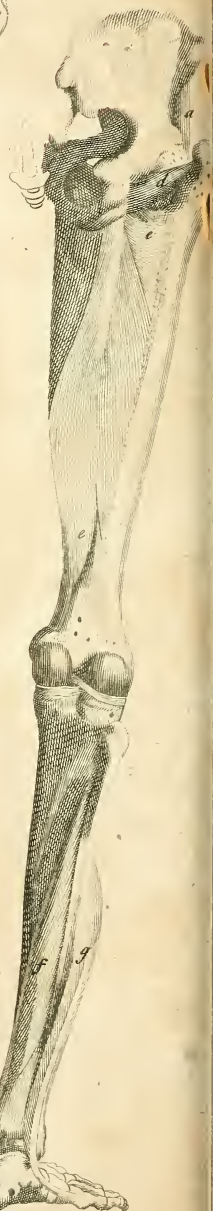


Fig. 5.



Fig. 6.

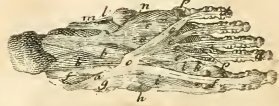


TABLE XV.

REPRESENTS the MUSCLES situated on the BACK-PART of the INFERIOR EXTREMITY.

FIG. 1.

A View of the First Layer of MUSCLES on the Back-part of the INFERIOR EXTREMITY.

- a*, The gluteus maximus.
- b*, Part of the gluteus medius.
- c*, The vastus externus.
- d*, Part of the adductor magnus femoris.
- e*, The gracilis.
- f*, Part of the sartorius.
- g*, The long head of the biceps flexor cruris ;
- h*, Its short head.
- i*, The semi-tendinosus.
- k*, The semi-membranosus.
- l*, Part of the vastus internus.
- m*, The edge of the plantaris.
- n*, The gastrocnemius externus.
- o, o*, The edges of the gastrocnemius internus.
- p*, The tendo Achillis.
- q*, The peroneus longus.
- r*, The peroneus brevis.
- s*, The flexor longus pollicis pedis.
- t*, The tendon of the peroneus brevis.
- u*, The tendon of the peroneus longus, in its passage to the sole.

v, The

T A B L E X V. CONTINUED.

- v, The tendons of the extensor longus digitorum pedis.
- w, The tendon of the peroneus tertius.
- x, The abductor minimi digiti pedis.
- y, A ligament common to the long and short peronei muscles, and one proper to each of them.
- z, The ligamentum tarfi annulare.

FIG. 2.

*The Second Layer of MUSCLES on the Back-part of the
INFERIOR EXTREMITY.*

- a, The gluteus medius.
- b, The piriformis.
- c, The gemini.
- d, The tendon of the obturator internus passing between the gemini.
- e, The quadratus femoris.
- f, The vastus externus.
- g, The adductor magnus femoris.
- h, The semi-tendinosus.
- i, The gracilis.
- k, The semi-membranosus.
- l, The biceps flexor cruris.
- m, The long head of the biceps.
- n, The short head.
- o, The common tendon of the two heads.
- p, Part of the vastus internus.
- q, q, The cut heads of the gastrocnemius externus.
- r, The popliteus.
- s, The soleus.

t, The

T A B L E XV. CONTINUED.

- t*, The plantaris.
- u*, The cut tendon of the gastrocnemius externus.
- v*, The tendo Achillis, with the tendon of the plantaris adhering to it.
- w*, The peroneus longus.
- x*, The peroneus brevis.
- y*, The flexor pollicis longus.
- z*, The tendons of the extensor digitorum longus.
- 1, The extensor brevis digitorum.
- 2, The flexor brevis digitorum.

FIG. 3.

*The Third Layer of MUSCLES on the Back-part of the
INFERIOR EXTREMITY.*

- a*, The gluteus minimus.
- b*, The obturator internus.
- c*, The tendon of the obturator externus.
- d*, The gracilis.
- e*, The semi-membranosus.
- f, f*, The adductor magnus femoris.
- g*, The short head of the biceps.
- b, b*, The cut heads of the gastrocnemius externus, with a view of the femilunar cartilages.
- i*, The popliteus.
- k*, The tibialis posticus.
- l*, The flexor longus digitorum pedis.
- m*, The flexor longus pollicis pedis.

n, The

TABLE XV. CONTINUED.

- r*, The peroneus longus, with the passage of its tendon to the sole.
- o*, The peroneus brevis.
- p*, The extensor brevis digitorum pedis.
- q*, The flexor digitorum accessorius.

FIG. 4.

A Posterior View of the Fourth Layer of MUSCLES on the INFERIOR EXTREMITY.

- a*, Part of the iliacus internus.
- b*, Part of the psoas magnus.
- c*, Their insertion into the trochanter minor.
- d*, The obturator externus.
- e, e*, The adductor magnus femoris.
- f*, The tibialis posticus.
- g*, The peroneus brevis, with the insertion of its tendon.

FIG. 5.

Represents the First Layer of MUSCLES on the Sole of the Foot, after removing the Common Integuments, the Aponeurosis Plantaris, and the Vaginal Ligaments of the Toes.

- a*, The flexor brevis digitorum, the tendons of which are perforated by the tendons of the flexor longus, and inserted into the second phalanx of the four small toes.
- b*, The tendon of the flexor longus pollicis, at the sides of which the flexor brevis pollicis appears.
- c*, The abductor pollicis.
- d, d*, The abductor minimi digiti.
- e, e*, The transversalis pedis.

FIG.

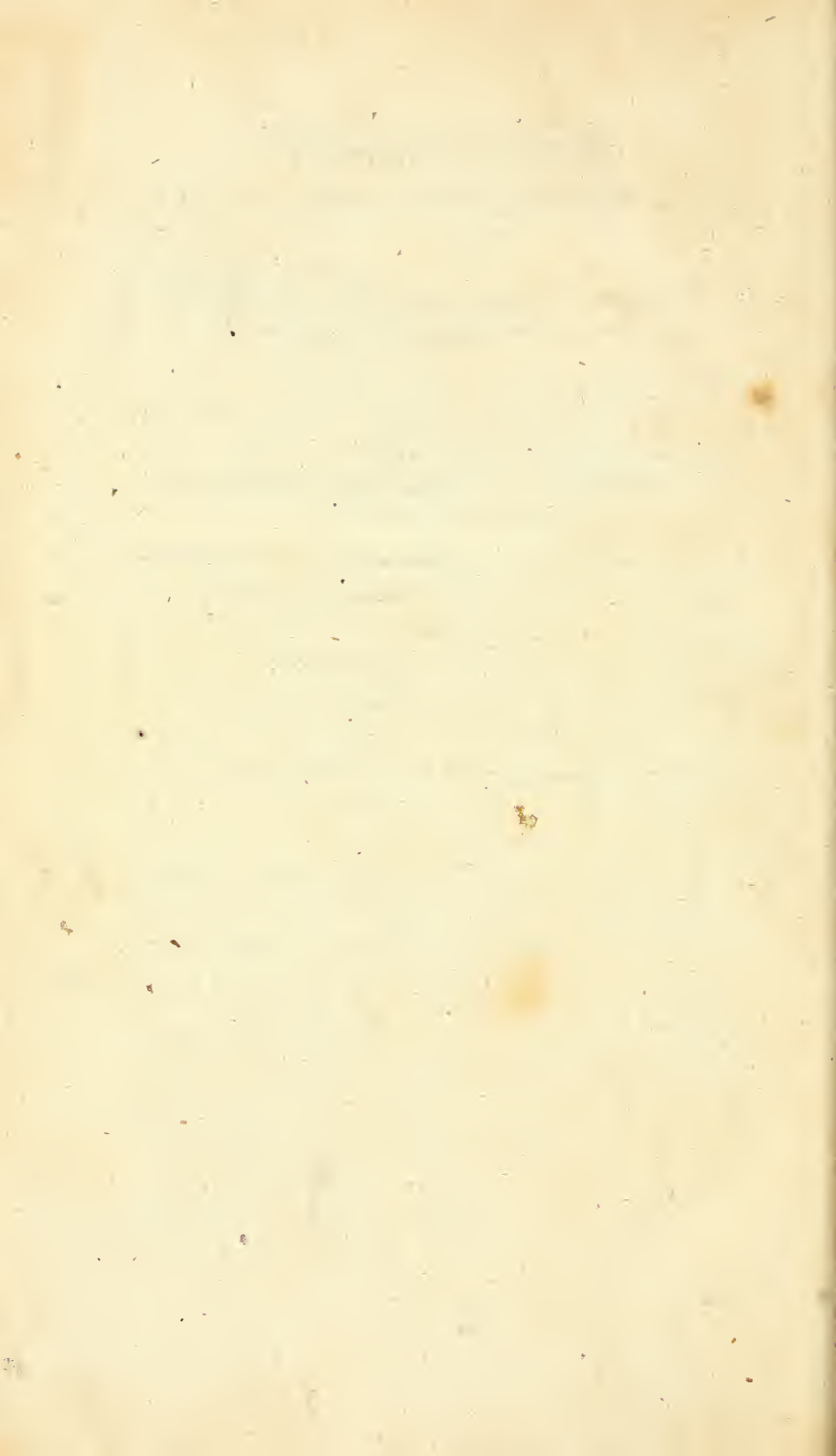
TABLE XV. CONTINUED.

FIG. 6.

The MUSCLES which appear in the Sole, after those represented in the former Figure have been removed.

- a*, The tendon of the flexor longus digitorum.
- b, b*, The flexor digitorum accessorius, with its insertion into the tendon of the flexor longus digitorum.
- c*, The connection of the flexor longus digitorum, and flexor longus pollicis.
- d, d*, The insertion of the tendons of the flexor longus digitorum into the last phalanx of the four small toes.
- e, e, e, e*, The four lumbricales.
- f, f*, The tendon of the flexor longus pollicis.
- g*, The insertion of the tibialis posticus.
- h*, The insertion of the tibialis anticus.
- i, i*, The two portions of the flexor brevis pollicis.
- k*, A small portion of the adductor pollicis.
- l*, The insertion of the peroneus brevis.
- m*, The tendon of the peroneus longus, passing to the sole.
- n*, The flexor brevis minimi digiti.
- o, o*, Two of the interossei, the insertions of which, and of the other interossei, are seen at the lateral parts of the roots of the toes.
- p, p*, The transversalis pedis.

TABLE







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