

Cooke (Thos.)

T A B L E T S
OF
ANATOMY AND PHYSIOLOGY.



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ANATOMY: — Bones & Cavities of Face;
Under Surface of Base & Lateral Region
of Skull.

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THE PALATE BONE

Presents *horizontal and vertical plates*,—from the point of junction of which two plates the *pterygoid process* projects backwards & outwards,—while from the upper border of the vertical plate project upwards, the *orbital process* in front, and the *sphenoidal process* behind.
It articulates with its fellow, the *superior maxilla, sphenoid, ethmoid, inferior turbinate & vomer*.
It assists in forming—principally, the *floor & outer wall of the nasal fossa and the roof of the mouth*, and—secondarily, the *floor of the orbit, the pterygoid & sphenomaxillary fossae, and the inner wall of the Antrum of Highmore*.

HORIZONTAL PLATE — Presents :

SUP. OR NASAL SURFACE — Smooth and concave from side to side, forms posterior part of floor of nasal fossa.

INF. OR BUCCAL SURFACE — Rough, marked posteriorly by a *Transverse ridge* for attachment of aponeurosis of tensor palati, and more externally by a *Deep notch*, which assists in forming the posterior palatine foramen. A little further back, on the under surface of the pterygoid process, are the *External & posterior small palatine foramina* for external and posterior palatine nerves.

ANTERIOR BORDER — Serrated for articulation with palate process of superior maxilla.

POSTERIOR BORDER — Free for attachment of soft palate.

INNER BORDER — Thick, surmounted by a ridge, which forms with its fellow a groove for vomer; presents posteriorly the

Posterior nasal spine for azygos uvulae.

VERTICAL PLATE — Presents :

INNER SURFACE — Presents the

Superior & middle turbinate crests, above, between & below which are seen *A narrow & two wider horizontal grooves*, which form part respectively of the superior, middle & inferior meatuses.

OUTER SURFACE — Presents towards its middle a

Smooth surface, which forms the inner wall of the sphenomaxillary fossa, and is prolonged inferiorly into a

Vertical groove, which assists in forming the posterior palatine canal. In front of these is a *Rough surface*, which articulates with the superior maxilla; and further forwards still a

Narrow smooth surface, which forms part of inner wall of antrum. Behind is a *Rough surface*, which articulates above with the pterygoid process, below with the superior maxilla.

ANTERIOR BORDER — Thin, irregular, presents a projecting lamina, the

Maxillary process, which assists in closing the lower part of the orifice of the antrum, and forming a schindylesis, penetrates into a fissure of the superior maxilla at the lower part of that orifice.

POSTERIOR BORDER — Articulates with the inner plate of the pterygoid process.

UPPER BORDER — Presents the

Orbital process in front, the *Sphenoidal process* behind, which processes are separated by a deep *Notch* forming the greater part of the sphenopalatine foramen (which foramen is completed above by the sphenoidal turbinated bone).

PTERYGOID PROCESS — Fits into the notch between the two plates of the pterygoid process of the sphenoid bone, and presents:

POSTERIOR SURFACE — Triangular, concave, forms part of pterygoid fossa.

TWO LATERAL SURFACES — Rough, articulate with the two plates of the pterygoid process & with the superior maxilla.

UNDER SURFACE — Forms part of the roof of the mouth, and presents the

External & posterior small palatine foramina for external & posterior palatine nerves.

ORBITAL PROCESS — Projects upwards & outwards from the anterior part of the upper border of the vertical plate, and presents:

THREE ARTICULAR SURFACES — *Anterior, posterior & internal*,— which join respectively with the *superior maxillary bone, the sphenoidal turbinated bone & the lateral mass of the ethmoid*.

TWO NON-ARTICULAR SURFACES :—

Superior or Orbital — Forms posterior part of floor of orbit;

External or Sphenomaxillary — Forms part of inner wall of sphenomaxillary fossa, and is separated from the foregoing by a *Rounded border*, which forms part of sphenomaxillary fissure.

SPHENOIDAL PROCESS — Curves upwards, backwards & inwards, and presents:

UPPER SURFACE — Articulates with sphenoid & sphenoidal turbinated bones, and assists in forming pterygopalatine canal.

OUTER SURFACE — Articulates behind with pterygoid process, and forms in front that small part of inner wall of sphenomaxillary fossa, which lies behind sphenopalatine foramen.

INNER SURFACE — Concave, forms part of outer wall of nasal fossa.

LATERAL REGION of the SKULL



Presents from behind forwards the:

Mastoid process;

Ext. auditory meatus;

Zygomatic arch & ramus of the jaw, which two latter arch over the temporal, zygomatic & sphenomaxillary fossæ.

TEMPORAL FOSSA

Is formed by the temporal, sphenoid, frontal & malar bones, the great wing of the sphenoid & the anterior inferior angle of the parietal, and is deeply excavated below & in front.

Is bounded above by the temporal ridge, and opens widely below into the zygomatic fossa, the boundary line between the two being the zygomatic arch & the pterygoid ridge.

ZYGOMATIC FOSSA

Is an irregular and imperfectly enclosed space, the incomplete walls of which are formed on the anterior, inner, upper & outer aspects respectively by the

Tuberosity of the sup. maxillary bone,

Ext. pterygoid plate,

Under surface of great wing of sphenoid as far as pterygoid ridge, and squamous portion of temporal bone.

Zygomatic arch & ramus of lower jaw.

Communicates with temporal fossa beneath the zygoma, and with the orbit & sphenomaxillary fossæ through the sphenomaxillary & pterygomaxillary fissures.

Sphenomaxillary Fissure - Is bounded by superior maxillary, great wing of sphenoid, malar & palate bones, and joins internally at right angles with pterygomaxillary fissure.

Opens up communications between the orbit and the temporal, zygomatic & sphenomaxillary fossæ.

Transmits infraorbital artery, superior maxillary nerve & ascending or orbital branches of Meckel's ganglion.

Pterygomaxillary Fissure - Is comprised between pterygoid process & tuberosity of superior maxillary bone.

Joins superiorly at right angles with sphenomaxillary fissure.

Transmits internal maxillary artery from zygomatic to sphenomaxillary fossa.

SPHENOMAXILLARY FOSSA - Is the narrow & vertically elongated space comprised between the pterygoid process & the maxillary tuberosity, and bounded above & internally by the body of the sphenoid & the vertical plate of the palate bone.

Its upper part is the point of meeting of the sphenoidal, sphenomaxillary & pterygomaxillary fissures.

It communicates with the cranium, orbit, zygomatic & nasal fossæ by the foramen rotundum & sphenomaxillary & pterygomaxillary fissures & the sphenopalatine foramen, and has opening into it, the vidian, pterygopalatine, posterior palatine & accessory posterior palatine canals.

UNDER SURFACE of the BASE of the SKULL

Is bounded from before backwards by :

Alveolar arch & teeth of upper jaw ;

Lower border of malar bone, zygoma & imaginary line from zygoma to mastoid process ;

Superior curved line of occipital bone.

Grouping points of interest on under surface of skull, the latter may be said to present from before backwards :

Roof of Mouth ;

Posterior Aperture of Nares :

Under Surface of Basilar Process, on each side of which is a

Quadrilateral Space, the angles of which are formed by the CONDYLE of the occipital bone, and by the PTERYGOID, ZYGOMATIC and MASTOID PROCESSES. This space is the Author's CONDYLO-PTERYGO-ZYGOMATO-MASTOID SPACE.

ROOF OF THE MOUTH

Is formed by palate processes of superior maxillary & horizontal plates of palate bones, and is bounded laterally & in front by alveolar arch.

Is concave, uneven & marked by a crucial suture, and presents from before backwards & outwards :

Lower opening of anterior palatine canal, into which may be seen to open, laterally

Foramen of Stenson for anterior palatine vessels, and in middle line,

Foramina of Scarpa for naso-palatine nerves ;

A groove leading to

Posterior palatine foramen for post. palatine vessels & ant. or great palatine n. ;

Transverse ridge for attachment of aponeurosis of tensor palati ;

Accessory or small palatine foramina, posterior & external, for posterior or small, and the external palatine nerves.

POSTERIOR APERTURE OF THE NARES

Is bounded by body of sphenoid, horizontal plate of palate bone, and inner plates of pterygoid processes, which latter present inferiorly

Hamular process for reflection of tendon of tensor palati, and superiorly,

Scaphoid fossa for origin of that muscle.

Is divided into two by vomer, and presents inferiorly

Posterior nasal spine for origin of azygos uvulae, and superiorly

Expanded alae of vomer, which articulate with rostrum & with vaginal processes of sphenoid, and on either side of which are

Pterygo-palatine canals formed in part by sphenoid & in part by palate bones, and giving passage to pterygo-palatine vessels & nerves.

UNDER SURFACE OF THE BASILAR PROCESS

Presents in middle line

Pharyngeal spine for median raphe & superior constrictor of pharynx, and laterally,

Rough depressions for insertion of recti capitis antici major & minor.

CONDYLO-PTERYGO-ZYGOMATO-MASTOID SPACE — V. next Tablot.

UNDER SURFACE OF THE OCCIPITAL BONE (REMAINING PART) — Presents :

Foramen magnum for cord & its membranes, vertebral arteries & spinal accessory nerves, on outer side of which foramen are

Condyles of occipital bone having

Jugular process on their outer side,

Anterior condyloid foramen in front,

Posterior condyloid fossa sometimes perforated by the posterior condyloid foramen behind.

Ext. Occipital Crest giving off laterally

Superior & Inferior curved lines, and ending posteriorly in

External occipital protuberance,

For parts just mentioned see Occipital Bone.

SUPERIOR MAXILLARY BONE — 2nd Tablet.

MALAR PROCESS — Triangular, and presents:

- Ant. Surface — Concave, forms part of canine fossa;
- Post. Surface — Concave, forms part of zygomatic fossa;
- Sup. Surface — Rough for articulation with malar bone.

NASAL PROCESS — Triangular, and presents:

- Outer Surface — Concave, gives attachment to orbicularis palpebrarum, tendo oculi, levator labii superioris alæque nasi.
- Inner Surface — Presents from above downwards:
 - Rough surface*, which articulates with ethmoid bone;
 - Superior turbinated crest* which articulates with middle turbinated bone;
 - Inferior turbinated crest* with the two grooves already described.
- Ant. Border — Thin, serrated above for articulation with nasal bone, and continuous below with margin of the deep notch, which bounds laterally the anterior aperture of the nasal fossæ.
- Post. Border — Presents a groove which forms part of nasal duct, of which groove the *Inner margin* articulates with lachrymal bone, while the *Outer margin* forms part of circumference of orbit, and presents the *Lachrymal tubercle* at its junction with orbital surface.

ALVEOLAR PROCESS — Forms a curve of a semi-horse-shoe shape. Is thicker behind than in front, and presents eight alveolæ in adults, five in children.

PALATE PROCESS — Presents:

- Upper Surface — Concave from side to side. Forms part of floor of nasal fossa, and presents in front the *Incisor foramen* or *foramen of Stenson*, which is completed on its inner side by a thin lamina of bone directed backwards from its anterior to its posterior border (from the latter of which this lamina remains disconnected in youth). This foramen leads below into the *Anterior palatine canal* formed by the junction of the two bones, into which canal when it is viewed from below, are also seen to open two other small foramina, the *Foramina of Scarpa* situated in the suture between the two laminae. — The foramina of Stenson transmit the anterior palatine vessels, while the foramina of Scarpa transmit the naso-palatine nerves, of which the right one is said to be posterior to the left.
- Under Surface — Concave, rough, forms part of roof of mouth. — Is channelled by a *Groove* (sometimes by a canal) for the posterior palatine vessels & anterior or great palatine nerve, and presents behind anterior part of lower orifice of *Posterior palatine canal*.
- Inner Border — Raised into a ridge which forms with its fellow a groove for vomer, and presents in front the *Anterior nasal spine*.
- Ant. Border — Forms lower part of anterior aperture of nasal fossæ.
- Post. Border — Articulates with horizontal plate of palate bone.

THE SMALL BONES of the FACE.

NASAL BONES — Form bridge of nose. — Narrow & thick above, wide and thin below.

Outer Surface — Convex from side to side, concave from above downwards at upper part. Present: Presents several arterial grooves and a foramen for a small vein.

Inner Surface — Inversely curved; presents a groove for external branch of nasal nerve.

Borders:

SUPERIOR — Narrow, thick, articulates with frontal;

INFERIOR — Broad, thin, joined to lateral cartilage of nose; has a notch for nasal nerve;

EXTERNAL — Articulates with nasal process of superior maxillary bone;

INTERNAL — Thick, articulates with its fellow; is prolonged backwards into a crest which articulates with nasal spine of frontal & perpendicular plate of ethmoid.

LACHRYMAL BONES — Form front part of inner wall of orbit. Present:

Outer Surface — Presents from before backwards:

Groove, which forms part of nasal duct;

Ridge, which gives attachment to tensor tarsi muscle;

Smooth surface, which forms part of inner wall of orbit.

Inner Surface — Presents a furrow corresponding to foregoing ridge; forms part in front of middle meatus, and articulates behind with ethmoid bone.

Borders:

ANTERIOR, SUPERIOR, POSTERIOR — Articulate respectively with nasal & internal angular processes of superior maxillary & frontal bones, and with os planum of ethmoid.

INFERIOR — Articulates behind with orbital plate of superior maxillary, and, in front, is prolonged downwards into a pointed process, *the hamulus lachrymalis*, which articulates with lachrymal process of inferior turbinated bone.

MALAR BONES — Articulate with temporal, frontal, sphenoid & superior maxillary bones, and form part of outer wall & floor of orbit, and of temporal & zygomatic fossae. Present:

Outer Surface — Convex; presents a small malar foramen for malar branch of temporo-malar nerve, and gives attachment to the zygomatic muscles.

Inner Surface — Articulates internally with superior maxillary bone by a rough triangular surface, and is concave externally, where forms part of temporal & zygomatic fossae and presents a foramen for temporal branch of temporo-malar nerve.

Orbital Process — Projects backwards forming part of outer wall of orbit and of temporal fossa; articulates from above downwards with frontal, sphenoid & superior maxillary bones, and bounds speno-maxillary fissure anteriorly. — On its inner surface it presents one or two temporo-malar foramina.

Frontal Process — Thick, vertical, articulates with external angular process of frontal.

Zygomatic Process — Long, horizontal, articulates with zygomatic process of temporal.

Borders:

ANTERO-SUPERIOR — Forms lower & outer part of circumference of orbit.

ANTERO-INFERIOR — Articulates with superior maxillary bone.

POSTERO-SUPERIOR & POSTERO-INFERIOR — Are continuous with superior and inferior margins of zygomatic process.

INFERIOR TURBINATED BONES — Thin, and extend along whole length of outer wall of nasal fossa. Present:

Outer concave & Inner convex Surfaces, marked by vascular grooves and canals, and the latter of which looks upwards & inwards.

Upper Border — Which, from before backwards:

Articulates with inferior turbinated crest of superior maxillary;

Forms *lachrymal process*, which articulates with lachrymal & superior maxillary bones and completes nasal duct;

Presents *maxillary process*, which curves downwards and outwards over lower edge of orifice of antrum of Highmore.

Presents *ethmoidal process*, which ascends to join unciform process of ethmoid.

Lower Border — Is free and slightly thickened.

VOMER — Forms posterior part of nasal septum, and is frequently bent to one or other side.

Lateral Surfaces — Present vascular & nervous furrows, and naso-palatine groove for naso-palatine nerve. Present:

Superior Border — Presents a deep groove bounded by two projecting *ala*, between which the rostrum of the sphenoid is received, and which are overlapped inferiorly by the vaginal processes of the same bone.

Inferior Border — Articulates with ridge formed by palate plates of superior maxillary & palate bones.

Anterior Border — Is grooved above for articulation with perpendicular plate of ethmoid and joined below to cartilage of the septum.

Posterior Border — Free, thicker above than below; separates posterior apertures of the nares.

THE ORBIT.

Quadrilateral pyramidal fossa looking forwards & outwards and formed by seven bones, the frontal, ethmoid, sphenoid (which enter into formation of both orbits), superior maxillary, malar, lachrymal & palate.
Communicates with cranium, and with nasal, temporal, zygomatic & sphenomaxillary fosse through optic foramen, nasal duct & sphenomaxillary fissure.

Presents:

ROOF — Formed by orbital plate of frontal & lesser wing of sphenoid. Is concave, and presents the suture between the foregoing bones, and in front the *Lachrymal fossa* for lacrymal gland, and a *Depression (fovea trochlearis)* for pulley of superior oblique.

FLOOR — Formed by upper or orbital surface of superior maxillary and orbital processes of malar & palate bones. Presents the sutures between foregoing bones, the *Infra-orbital groove* for infra-orbital vessels & nerve, which becomes converted in front into *Infra-orbital canal*; and also at its anterior & inner part a *Depression* for inferior oblique muscle.

INNER WALL — Formed from before backwards by nasal process of superior maxillary, lachrymal, os planum of ethmoid, body of sphenoid. Is antero-posterior in direction and parallel to its fellow, and presents the sutures between foregoing bones and the *Lachrymal groove* for lacrymal sac, *Crest of lachrymal bone* for tensor tarsi muscle.

OUTER WALL — Formed in front by orbital process of malar bone, and behind by anterior or orbital surface of great wing of sphenoid. Is very oblique forwards & outwards being nearly at right angles with its fellow, and presents the suture between foregoing bones, and the *Orifices* of one or two malar canals, *Small spine* for lower head of external rectus.

ANGLES:

SUP. EXTERNAL — Presents:

Articulation of frontal with malar bone & orbital plate of sphenoid, *Sphenoidal fissure or foramen lacrum anterius* for 3rd, 4th & 6th nerves and ophthalmic nerve & vein.

SUP. INTERNAL — Presents

Suture connecting frontal with lachrymal & os planum, in which suture are the *Anterior ethmoidal canal* for nasal nerve & anterior ethmoidal vessels, and the *Posterior ethmoidal canal* for posterior ethmoidal vessels.

INF. EXTERNAL — Presents

Sphenomaxillary fissure for infra-orbital vessels & nerve and ascending branches of Meckel's ganglion.

INF. INTERNAL — Presents

Articulation of superior maxillary & palate bones with lachrymal & os planum.

CIRCUMFERENCE OR BASE — Quadrilateral, looks forwards & outwards. Is bounded by supra-orbital arch and external & internal angular processes of frontal, anterior border of orbital surface & nasal process of superior maxillary, and anterior border of malar bone. Presents *Supra-orbital notch or foramen* for supra-orbital vessels & nerve; and assists in forming *Nasal groove* for lacrymal sac.

APEX — Corresponds to optic foramen for optic nerve & ophthalmic artery.

THE NASAL FOSSÆ

Two narrow irregular cavities comprised between the orbits & superior maxillary bones, and between the roof of the mouth & the front part of the base of the skull. Formed by ethmoid, sphenoid, frontal, superior maxillary, nasal, palate, inferior turbinated & vomer (all the bones of the face except malar & inferior maxillary). Communicate with orbit (nasal duct), mouth, (anterior palatine canal), cranium (olfactory foramina), spheno-maxillary fossa (spheno-palatine foramen), and with the frontal, ethmoidal, sphenoidal, & maxillary sinuses. - Present:

ROOF — Narrow, and is from before backwards:

Oblique upwards & backwards and formed by nasal bone & nasal spine of frontal,
Horizontal and formed by cribriform plate of ethmoid,

Oblique downwards & backwards and formed by body of sphenoid. - Presents the sutures between the foregoing bones and from before backwards:

Groove on nasal bone for outer branch of nasal nerve;

Half crest for perpendicular plate of ethmoid;

Olfactory foramina & nasal slit for olfactory and nasal nerves;

Openings of sphenoidal sinuses partly closed by sphenoidal turbinated bones;

Articulation of ale of vomer with body of sphenoid.

FLOOR — Concave from side to side, and formed by palate processes of superior maxillary & palate bones. - Presents the suture between foregoing bones & the

Upper orifice of the anterior palatine canal;

Half crest for vomer, which terminates in front & behind in the

Anterior & posterior nasal spines.

INNER WALL — Formed principally by the perpendicular plate of the ethmoid above & in front, and by the vomer below & behind, and secondarily by nasal spine of the frontal, rostrum of sphenoid, crests of superior maxillary, nasal & palate bones. Has an angular deficiency in front which is filled up by the cartilage of the septum. - Is frequently inclined to one or other side; and presents the sutures between the foregoing bones and

Vascular & nervous furrows &

Naso-palatine groove for naso-palatine nerve.

OUTER WALL — Formed by:

Lacrimal bone & nasal process of superior maxillary;

Inner surface of ethmoid, superior maxillary & inferior turbinated bones;

Vertical plate of palate bone & inner plate of pterygoid process. - Presents the sutures between the foregoing bones and from above downwards:

Superior turbinated process of ethmoid;

Superior meatus, into which open the sphenoidal & posterior ethmoidal sinuses and the spheno-palatine foramen. - Both are short and are situated at the posterior and upper part of the nares;

Middle turbinated process of ethmoid;

Middle meatus, larger than foregoing, into which open the Antrum of Highmore and through the infundibulum, the anterior ethmoidal cells & frontal sinuses;

Inferior turbinated bone;

Inferior meatus, the largest, presents in front the opening of the nasal duct.

INFERIOR MAXILLARY BONE

is curved upon itself, and consists of a middle horizontal portion, the body, and of two lateral vertical portions, the rami.

BODY — Presents:

EXT. SURFACE — Convex from side to side and concave from above downwards. Presents in median line the

Symphysis, a vertical ridge, at the lower part of which is the
Mental process, from which the

External oblique line passes backwards, first horizontally, giving attachment to depressores labii inferioris & anguli oris, and then obliquely & becoming continuous with anterior border of ramus. — Laterally above the oblique line is the

Incisive fossa for levator menti; and more externally the

Mental foramen for mental vessels & nerve.

The Buccinator is attached above oblique line behind, and the platysma, below it, in front.

INT. SURFACE — Concave from side to side and convex from above downwards. Presents the

Symphysis forming a linear depression, close to which near its middle are the superior & inferior pairs of
Genial tubercles giving attachment respectively to the genio-hyo-glossi & genio-hyoidei. Below these tubercles begins the

Internal oblique line or *mylo-hyoid ridge* for mylo-hyoid muscle, faintly marked at first, but becoming more distinct as it passes upwards & backwards. — Above & below this line are seen near the symphysis the

Sublingual fossa for sublingual gland;

Rough depression for anterior belly of digastric; and more externally

Submaxillary fossa for submaxillary gland.

Above posterior extremity of mylo-hyoid ridge is attached the superior constrictor of the pharynx.

SUP. BORDER — Thickest behind, where it is dejected inwards; presents sixteen alveolae in the adult, ten in the child.

INF. BORDER — Thickest and slightly everted anteriorly.

RAMI — Are quadrilateral, and present:

EXT. SURFACE — Marked by oblique ridges for masseter.

INT. SURFACE — Presents near middle

Aperture of inferior dental canal, of which the anterior margin forms a prominent
Spine for internal lateral ligament of lower jaw; — and from which passes downwards & forwards the

Mylo-hyoid groove for mylo-hyoid vessels & nerve, behind which groove is a
Rough surface for internal pterygoid muscle.

UPPER BORDER — Presents the coronoid & condyloid processes separated by sigmoid notch.

Coronoid process — Triangular, gives attachment by its surfaces & borders to temporal muscle, and presents at its lower & front part a groove which is continued downwards upon the alveolar process, and which gives attachment inferiorly to the buccinator muscle.

Condyloid process — Consists of

Condyle — Oblong, convex from side to side and from before backwards & nearly transverse, its long axis when prolonged, meeting that of its fellow near anterior margin of foramen magnum.

Neck — Flattened from before backwards, convex behind, excavated in front for external pterygoid muscle, presenting externally a tubercle for external lateral ligament of jaw.

ANTERIOR BORDER — Continuous with external oblique line; thin above, thicker below where grooved for buccinator.

LOWER & POSTERIOR BORDERS — Thick and form inferiorly the *Angle of the jaw*, which gives attachment to masseter & internal pterygoid muscles and to stylo-maxillary ligament.

SUPERIOR MAXILLARY BONE — 1st Tablet.

Forms the whole of upper jaw by its union with its fellow.

Assists in forming :

Roof of mouth, floor & outer wall of nose, floor of orbit ;

Zygomatic & spheno-maxillary fossae ;

Spheno-maxillary & pterygo-maxillary fissures.

May be described as presenting a body and four processes, malar, nasal, alveolar & palate.

BODY — Hollowed out to form Antrum of Highmore. — Presents :

OUTER SURFACE — Convex. Presents from within outwards & backwards :

Incisive or myrtiform fossa for depressor alae nasi,

Canine fossa, large & deep for origin of levator anguli oris & compressor nasi;
at upper part of which fossa is the

Infra-orbital foramen for infra-orbital vessels & nerve;

Vertical ridge, which descends from malar process, and behind which is the

Maxillary tuberosity; which is rough along its posterior border for articulation
with the palate bone & sometimes with pterygoid process of sphenoid.

INNER SURFACE — Divided into two unequal parts by palate process.

PART ABOVE PALATE PROCESS — Presents from before backwards the

Inferior turbinated crest, above and below which are

Two wide antero-posterior grooves, which form part of middle & inferior
meatuses, and the former of which is surmounted by the

Superior turbinated crest, which lies on inner surface of nasal process;

A deep groove which is converted into nasal duct by articulation with lacrymal & inferior turbinated bones;

Aperture of Antrum of Highmore very large in disarticulated bone but
diminished in articulated skull by ethmoid, lacrymal, inferior
turbinated & palate bones, and presenting inferiorly a fissure
into which is received the maxillary process of the palate bone.

A rough surface which articulates with palate bone and is divided into an
anterior & a posterior portion by a

Vertical groove, which forms part of posterior palatine canal.

PART BELOW PALATE PROCESS — Forms anterior part of roof of mouth.

UPPER SURFACE — Forms greater part of floor of orbit, and is bounded :

ON INNER SIDE — By a thin edge which articulates from before backwards
with lacrymal bone, os planum & orbital process of palate bone.

ON OUTER SIDE — By a rounded margin which forms part of spheno-
maxillary fissure.

IN FRONT — By lower part of circumference of orbit. — It presents behind

Infra-orbital groove for infra-orbital vessels & nerve, which groove becomes converted in front into

Infra-orbital canal; — and at its anterior & inner part a

Depression for inferior oblique muscle.

Antrum of Highmore or Maxillary Sinus — Is a large cavity hollowed out of
body of the superior maxillary bone.

Its walls correspond to the three surfaces of the body of the bone; they are
very thin, and contain the infra-orbital & ant. & post. dental canals.

Its aperture communicates with the middle meatus of the nasal fossae, and is
much diminished in size, and generally divided into two by articulation
with ethmoid, lacrymal, inferior turbinated & palate bones.

Several laminae of bone project into its cavity, as do also the roots of the 1st
& 2nd molar teeth, which sometimes perforate its floor.

CONDYLO-PTERYGO-ZYGOMATO-MASTOID SPACE

is formed by the under surfaces of the occipital bone and of the squamous & petrous portions of the temporal and of the greater wing of the sphenoid, and is situated on either side of the basilar process.

It is quadrangular.

ITS ANGLES

Are formed by the Condyles of the occipital bone and by the Pterygoid, Zygomatic & Mastoid processes. (Vide these parts in respective Tablets.)

It is divided in two by a well marked diagonal line obliquely directed from before backwards & outwards, and presents points of interest both in front of & behind its diagonal line.

ITS DIAGONAL LINE

Extends from the root of the pterygoid to the mastoid process, and presents from before backwards & outwards the

Foramen lacerum medium closed by cartilage, and crossed superiorly by the internal carotid artery & the Vidian nerve;

Rough surface for origin of levator palati & tensor tympani;

Inf. orifice of Carotid Canal;

Vaginal process;

Styloid process, which gives attachment to the stylo-hyoid & maxillary ligaments and from above downwards to the stylo-pharyngeus, -hyoidens & -glossus muscles;

Stylo-mastoid foramen for facial nerve & stylo-mastoid artery.

IN FRONT & on the OUTER SIDE of the DIAGONAL LINE

Are found from before backwards & outwards the

Foramen ovale for inferior maxillary & small petrosal nerves and small meningeal artery, and on inner side of which is sometimes found the

Foramen Vesalii for a small vein;

Foramen Spinosum for middle meningeal artery;

Spine of the Sphenoid for internal lateral ligament of jaw & laxator tympani m.

Openings of the canal for the tensor tympani muscle (above) & of the osseous portion of the Eustachian tube (below).

Glenoid fossa divided by Glaserian fissure into

Anterior part, covered with cartilage which latter is prolonged over the eminentia articularis;

Posterior part non articular, and bounded behind by the vaginal & auditory processes and the middle root of the zygoma.

BEHIND & on the INNER SIDE of the DIAGONAL LINE

Are the:

Jugular fossa for internal jugular vein. This fossa assists in forming the

Jugular foramen or Foramen Lacerum posterius, of which the

Anterior or inner part, smaller and separated from the remainder by a bony ridge, gives passage to the glosso-pharyngeal, pneumogastric & spinal accessory nerves, while the

Posterior part, the larger; transmits the internal jugular vein;

Jugular process for rectus capitis lateralis & lateral occipito-atloid ligament.

This process has in front of it the

Anterior condyloid foramen for hypoglossal nerve; behind it the

Posterior condyloid fossa sometimes perforated by *posterior condyloid foramen* for a small vein to lateral sinus; and also the

Openings for Jacobson's & Arnold's ns. and the opening of the Aqueductus Cochlae.

LIST OF THE TABLETS

READY ON MARCH 1st, 1874.

PUBLISHED: — Cranial Nerves, 6d.; Arteries of the Limbs, 6d.; Bones of the Skull, &c., 6d.; Bones of the Face, &c., 6d.; Ear & Eye, 1s.; General Development of the Embryo, 6d.; Circulation, Respiration, Animal Heat, (Second Edition) 1s.

STILL UNPUBLISHED:

Bones — General characters of the vertebræ. The three groups of vertebræ. Particular vertebræ. The ribs. Particular ribs. Bones of the carpus, first row. Bones of the carpus, second row. How to class scattered bones of the carpus into right & left. (The bones of the limbs will be ready shortly).

Articulations — The three classes of joints. Articulations of the vertebræ. Articulation of the cranium with the spine. Articulations of the pelvis. Articulations of the ribs. Temporomaxillary articulation. Scapulo-clavicular articulation. Sterno-clavicular articulation. Radio-ulnar articulations. Wrist joint. Articulations of the carpus. Hip joint. Knee joint. Ankle joint. Articulations of the tarsus.

Muscles — Head & neck. — Back. — Upper extremity. — Lower extremity.

Arteries — Arch of the aorta. Thoracic aorta & abdominal aorta. Innominate, common & external carotid arteries. Anterior branches of external carotid. Internal & posterior branches. Terminal branches. Branches of internal maxillary. Internal carotid artery. Ophthalmic artery. Arteries of the base of the brain. Subclavian artery. Vertebral artery. Thyroid axis. Branches of the abdominal aorta. Cœliac axis. Mesenteric arteries. Common & external iliac arteries. Internal iliac & its branches.

Nervous System — Convex surface of the cerebrum. Under surface of the cerebrum. Ventricles of the brain & parts seen in them. Cerebellum. Fourth ventricle. Mesocephalon. Cervical plexus. Brachial plexus. Median & musculo-cutaneous nerves. Ulnar & internal cutaneous nerves. Musculo-spiral & circumflex nerves. Lumbar plexus. Obturator nerve. Anterior crural nerve. Sacral plexus. Pudic nerve. Great sciatic & external popliteal nerves. Internal popliteal & plantar nerves. Cranial portion of the sympathetic. Cervical portion of the sympathetic. Branches of distribution of the cervical portion of the sympathetic. Nerves of the heart. Cardiac plexuses.

Internal Organs — Tongue. Salivary glands. Soft palate. Pharynx. Regions of the abdomen. Peritoneum. Stomach. Structure of stomach. Small intestine. Structure of small intestine. Large intestine. Rectum. Liver. Under surface of liver. Spleen. Kidney and ureter. Bladder. Prostate. Testicle & epididymis. Structure of testicle. Vas deferens, vesiculæ seminales & ejaculatory ducts. Spermatic cord. Coverings of the testicle. Descent of the testicle. Male urethra. Structure of the penis. Mediastinum. Pericardium. Heart. Interior of the heart. Structure of the heart. Cartilages of the larynx. Muscles of the larynx. Trachea. Pleura. Lungs. Structure of the trachea & bronchi. Structure of the lungs.

Regional Anatomy & Dissections — Dissection of the scalp. Interior of the skull & removal of the brain. Dissection of the orbit. Dissection of the anterior wall of the thorax & axilla. Dissection of the upper arm & bend of the elbow. Dissection of the front of the thigh. Scarpa's triangle & femoral hernia. Ilio-inguinal region & inguinal hernia. Ischio-rectal region. Perinæum. Pelvic fascia. Side view of the male pelvis.

Structural Anatomy — Connective, cellular or fibrous tissue. Cartilage. Bone tissue. Development of bone tissue. Muscular tissue. Unstripped muscular tissue. Nervous tissue. Microscopical anatomy of the organs, Vide above.

Physiology — Deglutition. Food. Saliva. Gastric juices. Digestion of food in the stomach. Structure of the liver. Biliary secretion. Uses of bile. Glycogenic function of the liver. Functions of the spleen. Lymphatics & lacteals. Absorption. Secretion. The skin & its functions. Urinary excretion. Physical properties of urine. Chemical composition of urine. Functions of the nerve centres. Reflex action. Functions of the nerve fibres. Functions of the spinal cord. Functions of the medulla oblongata. Functions of the cerebellum. Physiology of the motor nerves of the eyeball. Functions of the 5th cranial nerve. Functions of the pneumogastric nerve. Functions of the facial nerve. Functions of the sympathetic.

Development of the Organs & Tissues and Comparative Anatomy — Vide separate list.

N. — OTHER TABLETS on ANATOMY & PHYSIOLOGY, and also TABLETS on SURGERY, are in course of PREPARATION.