



Mandibular right first molar

general landmarks

- It is the largest tooth in the mandibular arch .
- It has well-developed five cusps: two buccal ,two lingual ,and a distal cusp.
- It has two well developed roots ,one mesial and one distal ,which are very broad buccolingually.



general landmarks

Shaded area : Central fossa.

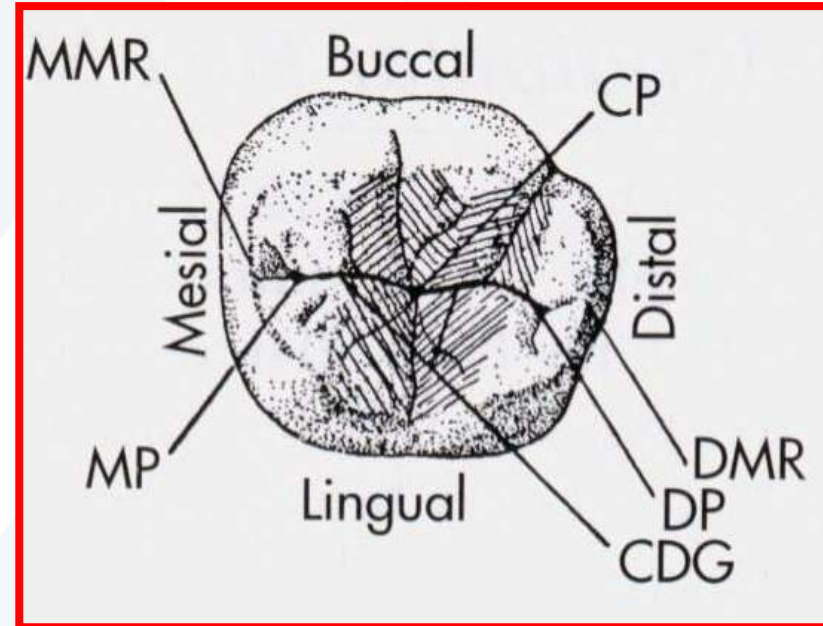
CP: Central pit.

DMR: Distal marginal ridge . **DP** :
Distal pit.

CDG : Central developmental
groove.

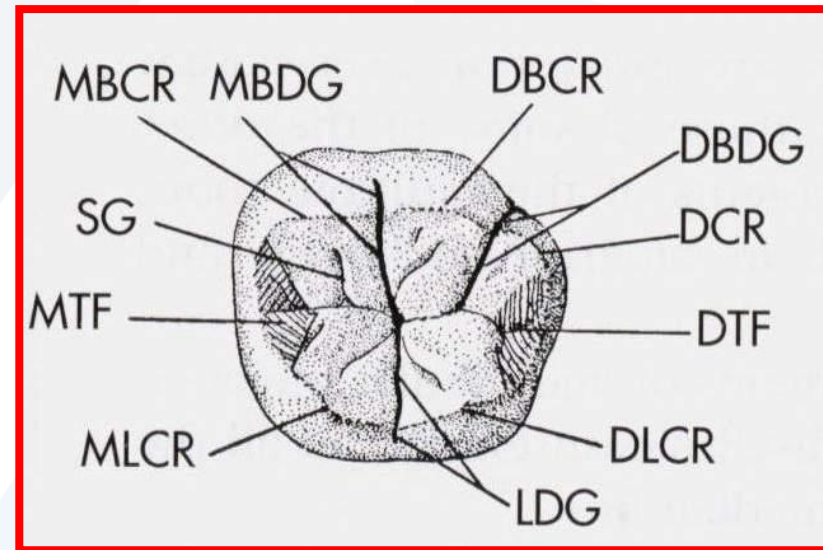
MP : Mesial pit.

MMR: Mesial marginal ridge.



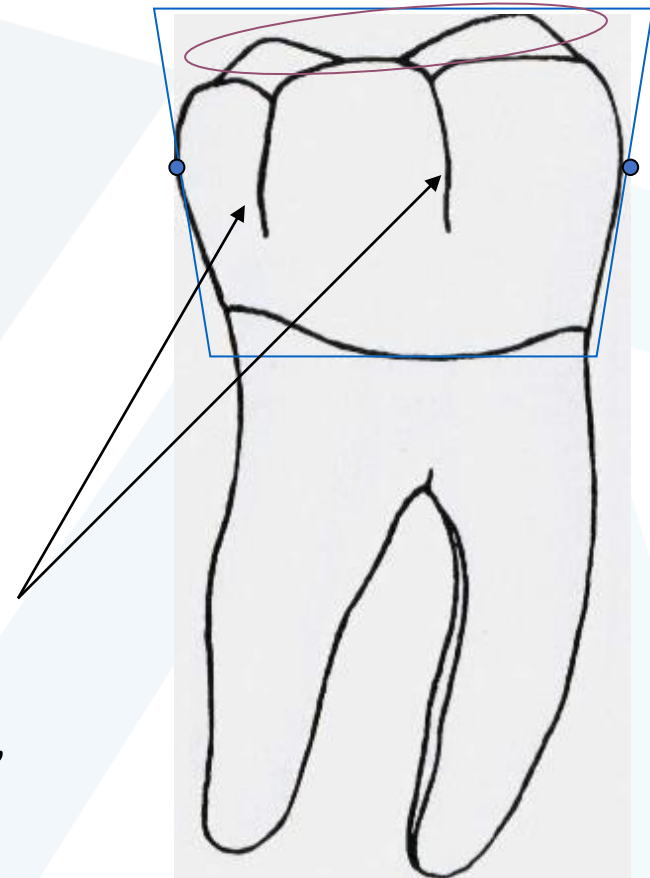
general landmarks

- **DBCR: Distobuccal cusp ridge.** **DBDG**
:Distobuccal development groove **DCR: Distal cusp**
ridge .
- **DTF: Distal triangular fossa.**
- **DLCR: Distolingual cusp ridge .**
- **LDG :Lingual development groove .** **MLCR**
:Mesiolingual cusp ridge .
- **MTF: Mesial triangular fossa.**
- **SG: a supplemental groove.**
- **MBCR: Mesiobuccal cusp ridge.** **MBDG:**
Mesiobuccal developmental groove



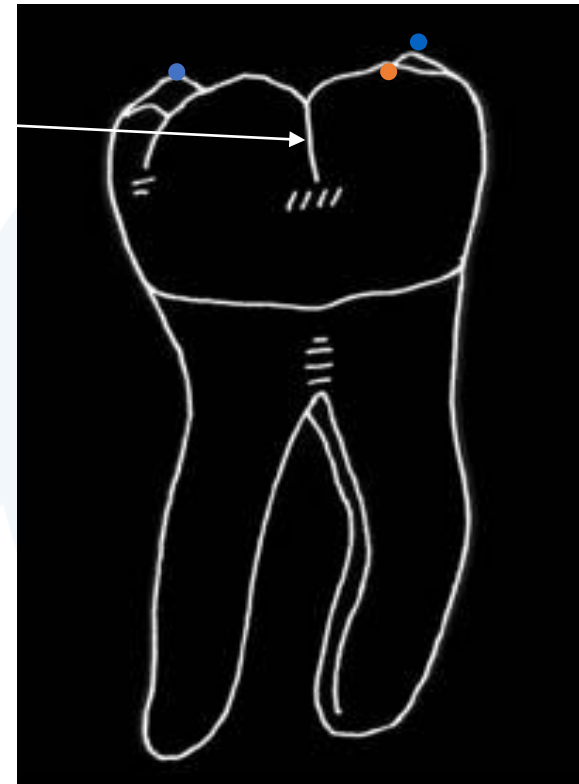
Buccal aspect

- The crown is roughly **trapezoidal**.
- the **occlusal side** is longer.
- **Proximal heights of contour** at the junction of middle and occlusal 1/3.
- two developmental grooves are seen , the mesiobuccal development groove, and the distobuccal groove .



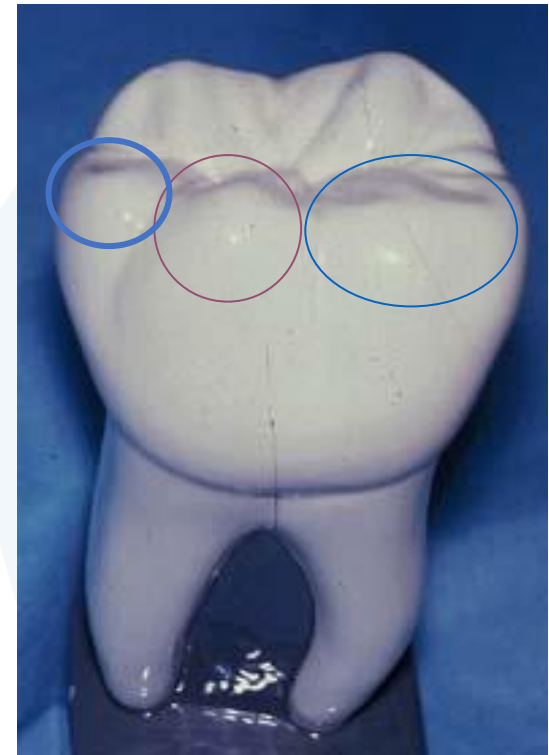
Buccal aspect

- Buccal groove slightly mesial of center .
- Mesiolingual cusp tip lies mesial to mesiobuccal cusp tip .
- Distolingual cusp tip lies between distobuccal and distal cusp tips .



Buccal aspect

- **Mesiobuccal cusp** is the largest, **distal cusp** is the smallest.
- Relative sizes of buccal cusps:
mesiobuccal > **distobuccal** > **distal**.
- **Mesiobuccal** and **distobuccal** cusps are closer together than the two lingual cusps.



Buccal aspect

- Mesial surface has greater convexity than distal surface.
- Buccal groove and distobuccal groove well defined.
- The cervical line is regular , bipping apically toward the root bifurcation .



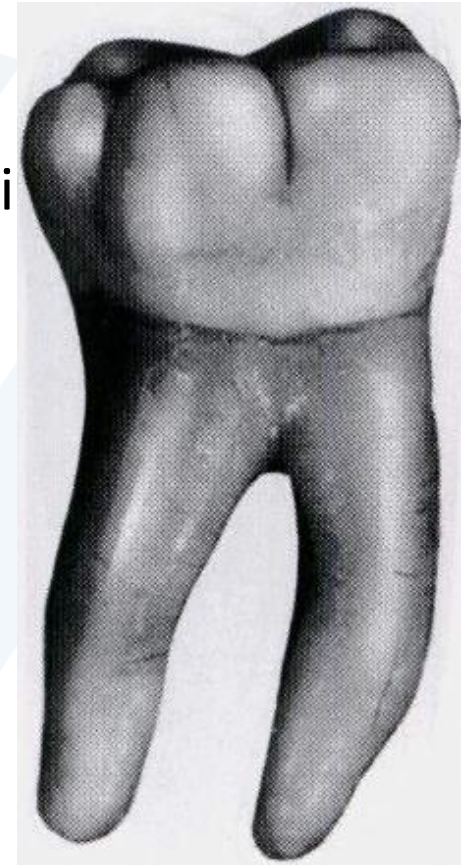
Buccal aspect

- the **mesiobuccal cusp** is the widest mesiodistally of the three buccal cusps.
- Notice **crest of curvature** in gingival 1/3.



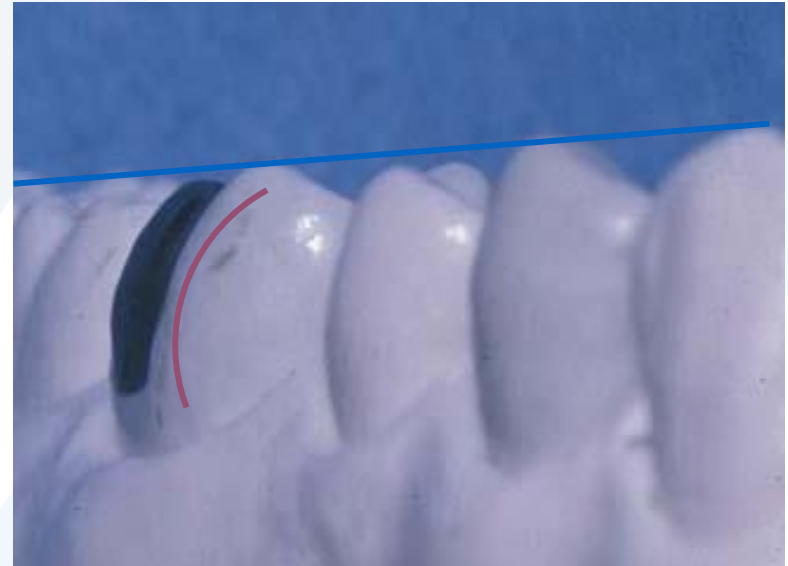
Buccal aspect

- the mesial root is curved mesially from a point shortly below the cervical line to the middle portion and then it curves distally to the tapered apex .
- the distal root is less curved than the mesial root .

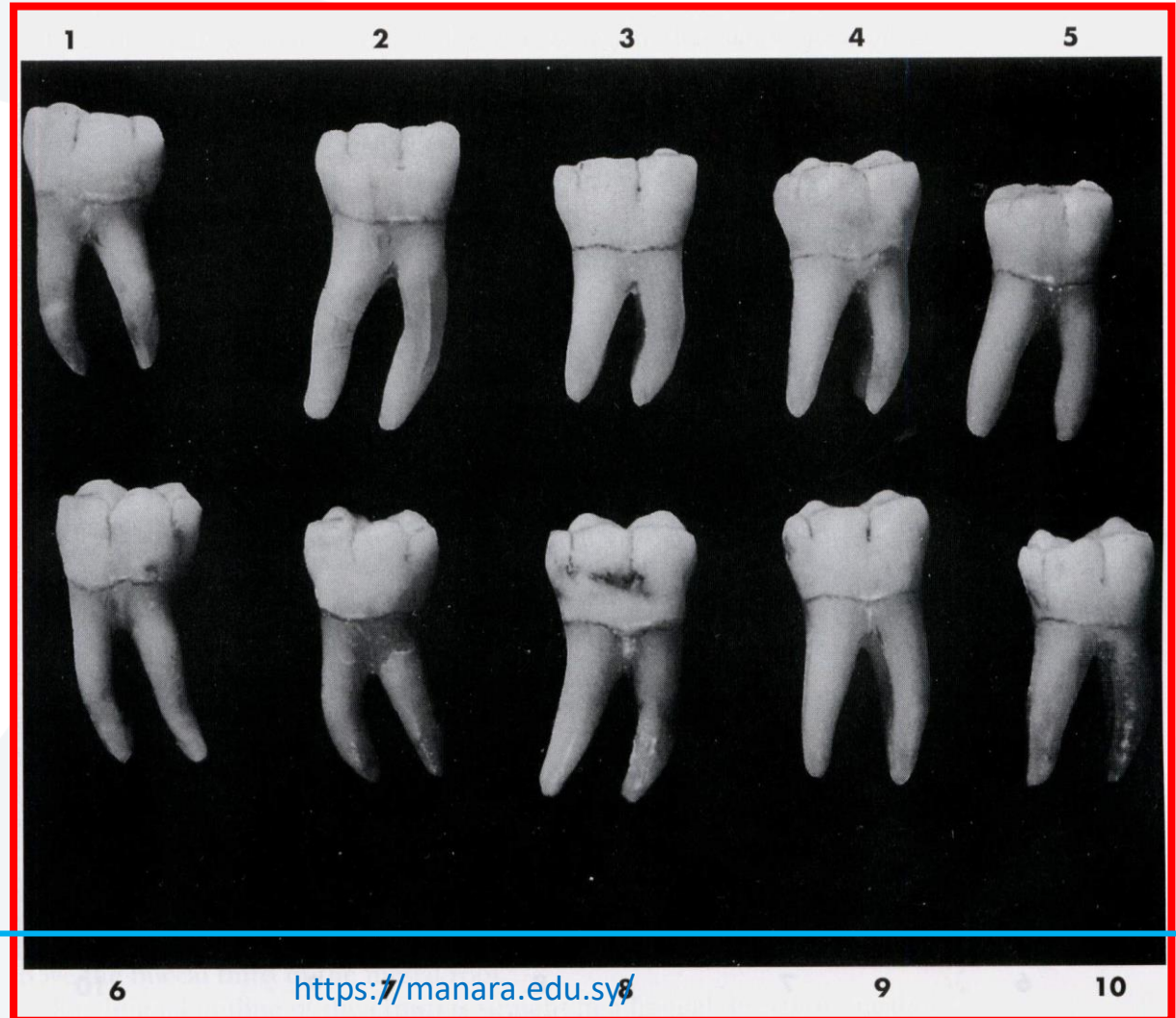


Buccal aspect

- Buccal cusps are lingually displaced as occlusal 1/2 of buccal surface curves lingually.
- Buccal cusps line up in the same plane as the buccal cusps of the other teeth in this quadrant .



Ten typical specimens



- Buccal Aspect

Lingual aspect

- The lingual cusps are pointed ,and the cusp ridges are high enough to hide the two buccal cusps from this view .
- the roots measure 1 mm longer lingually than buccally.



Lingual aspect

- Tooth is narrower mesiodistally in its lingual 1/2 than in its buccal 1/2.
- Cusp tips of the two lingual cusps are widely separated, and sharp.
- Lingual groove is centered, and well defined .



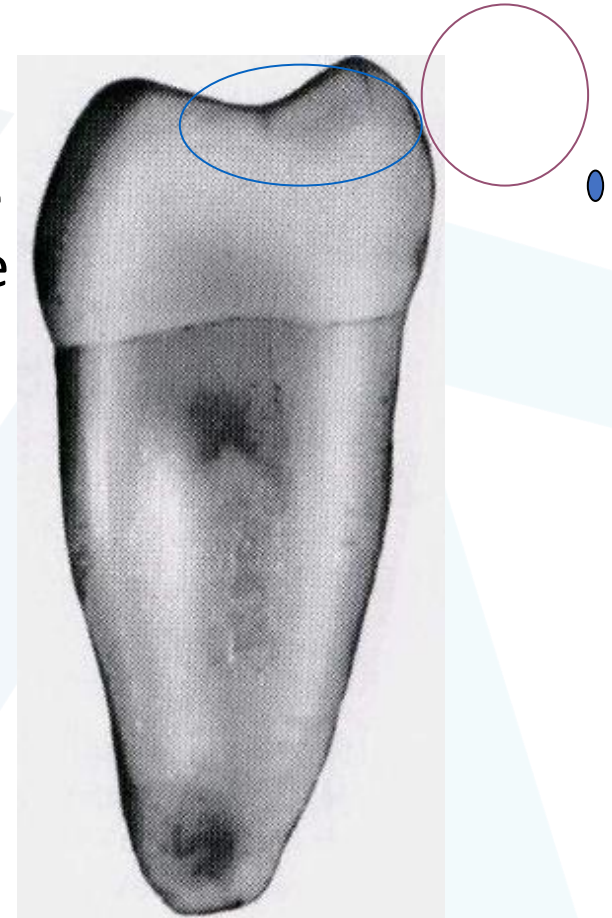
Mesial aspect

- The buccolingual measurement of the crown is greater at the mesial portion than it is at the distal portion .
- the buccolingual measurement of the mesial root is also greater than the same measurement of the distal root.
- Therefore because the mesial portion of the tooth are broader and the mesial cusps are higher , the distal portion of the tooth cannot be seen from this angle



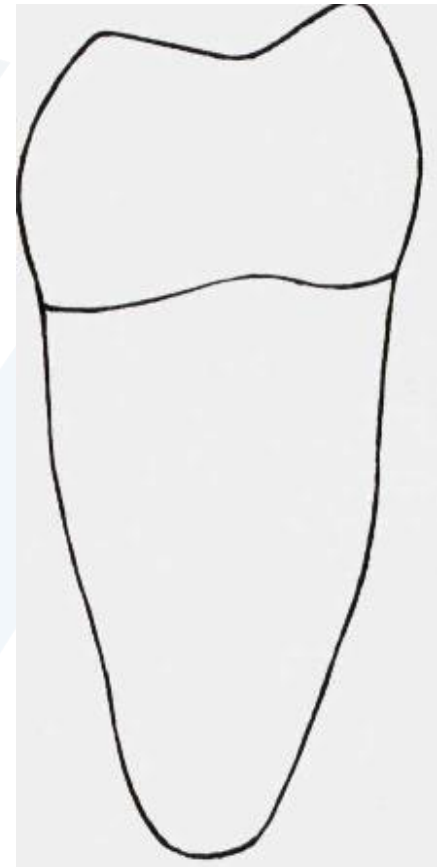
Mesial aspect

- We can see two cusps and one root only ,the **mesiobuccal** and **mesiolingual** cusps, and the mesial root .
- **Lingual height of contour** is located in the middle 1/3.



Mesial aspect

- Mesiolingual cusp is longer and sharper than mesiobuccal cusp.



Mesial aspect

- Mesial marginal ridge crossed by one or two occlusal spillways.



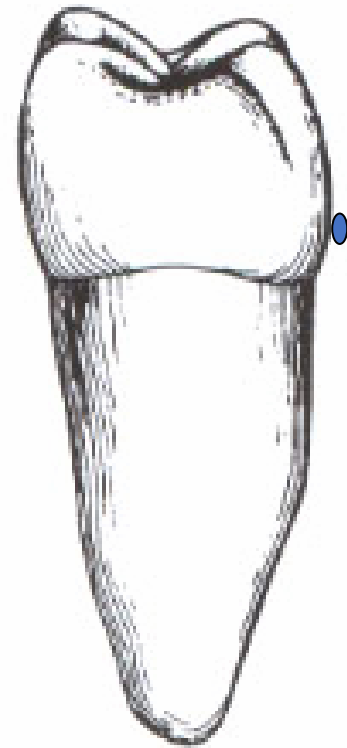
Ten typical specimens

- Mesial Aspect



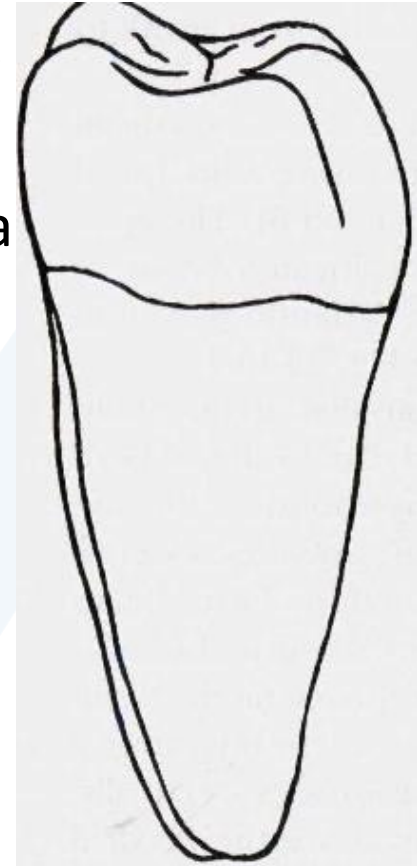
Distal aspect

- The crown is shorter distally .
- The distal cusp is in the foreground on the crown portion.
- Crest of curvature on buccal is in the gingival 1/3.



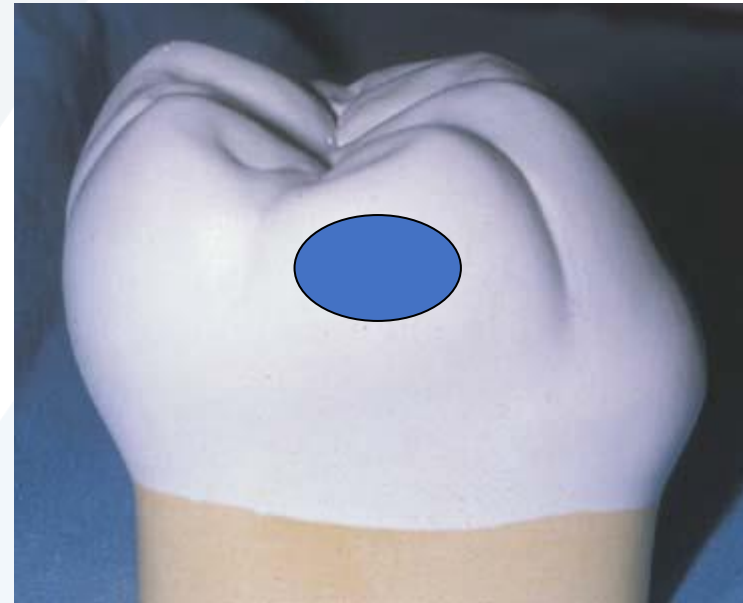
Distal aspect

- Mesio Buccal and mesio lingual cusps are partially visible since they are the largest cusps.



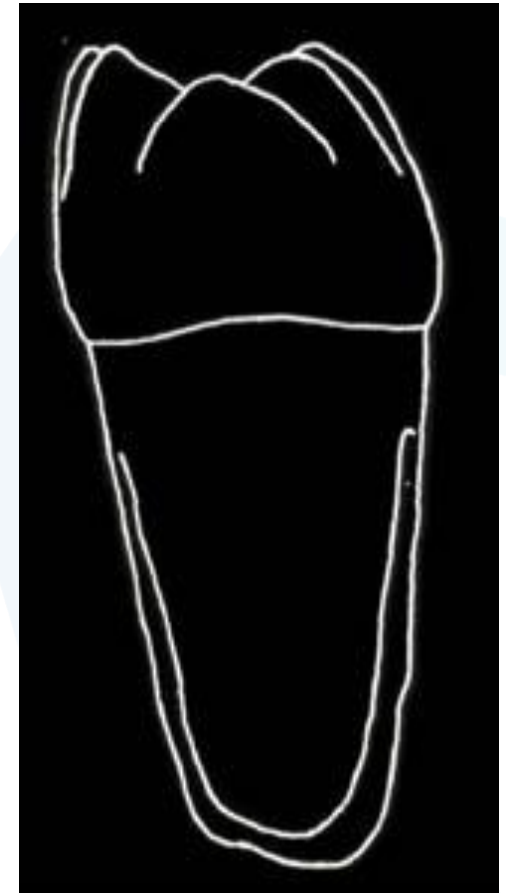
Distal aspect

- The buccal surface shows more convergence than the lingual surface.
- The distal cusp is placed a little buccal to center buccolingually with the distal contact area appearing on its distal contour. **Distal contact** is placed just below the distal cusp ridge of the distal cusp ..



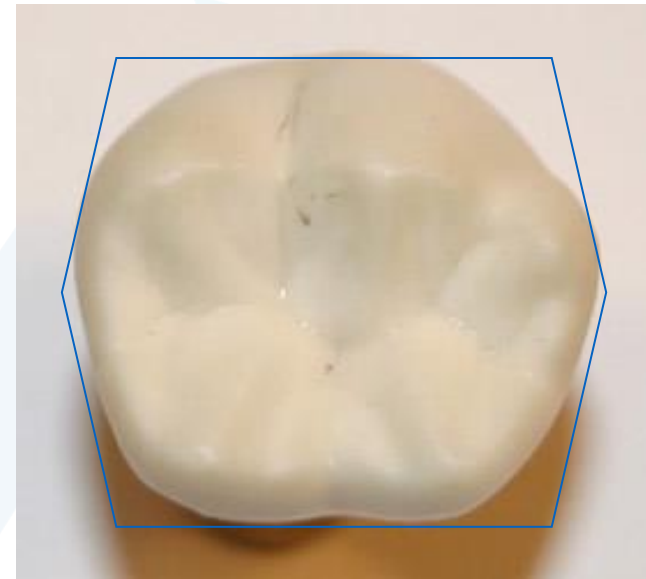
Distal aspect

- The distal root is more narrow buccolingually than the mesial root.
- The apical third portion of the root is more rounded than is found on the mesial root.



Occlusal aspect

- It is somewhat **hexagonal** from the occlusal aspect.
- The crown measurements is 1 mm or more greater mesiodistally than buccolingually .
- the mesiobuccal cusp is slightly larger than either of the two lingual cusps ,which are almost equal to each other in size, the distal is the smallest cusp of all.



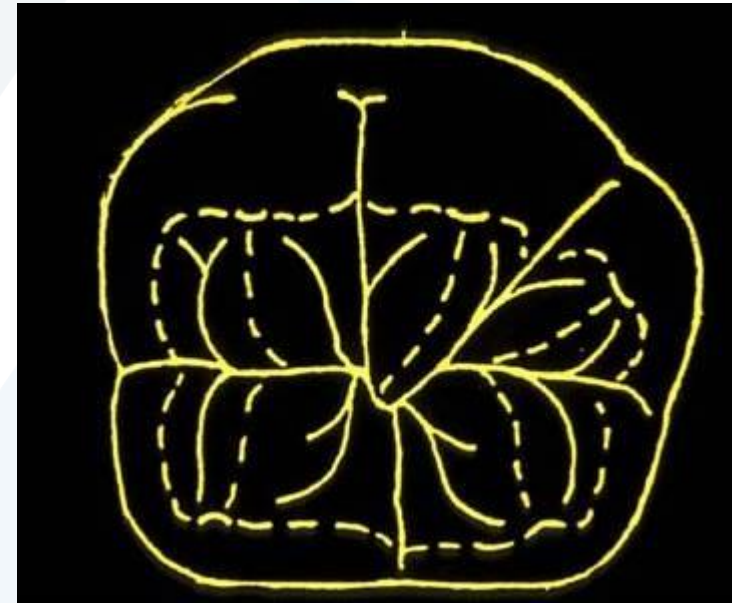
Occlusal aspect

- Triangular grooves are well defined around each of the 5 triangular ridges.
- Lingual triangular grooves are more shallow than buccal triangular grooves .
- Buccal groove is positioned slightly MESIAL to the lingual groove .



Occlusal aspect

- Central groove is directed slightly lingually from the buccal groove to the lingual groove.
- Mesial marginal ridge crossed by one or two occlusal spillways.



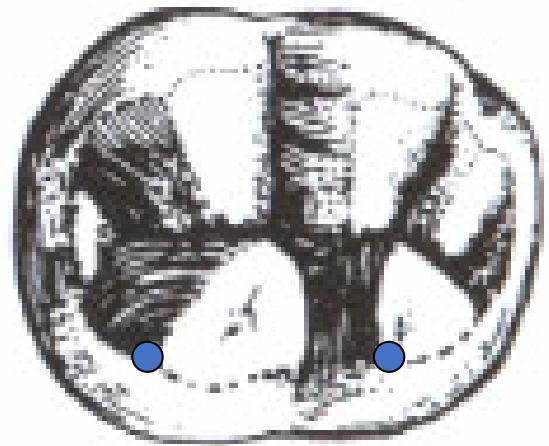
Occlusal aspect

- The mesiodistal dimension of this tooth is greater in its buccal $\frac{1}{2}$ than in its lingual $\frac{1}{2}$.
- Due to incline of buccal surface, the tips of the buccal cusps are lingually displaced, and much of the buccal surface is visible in this view .



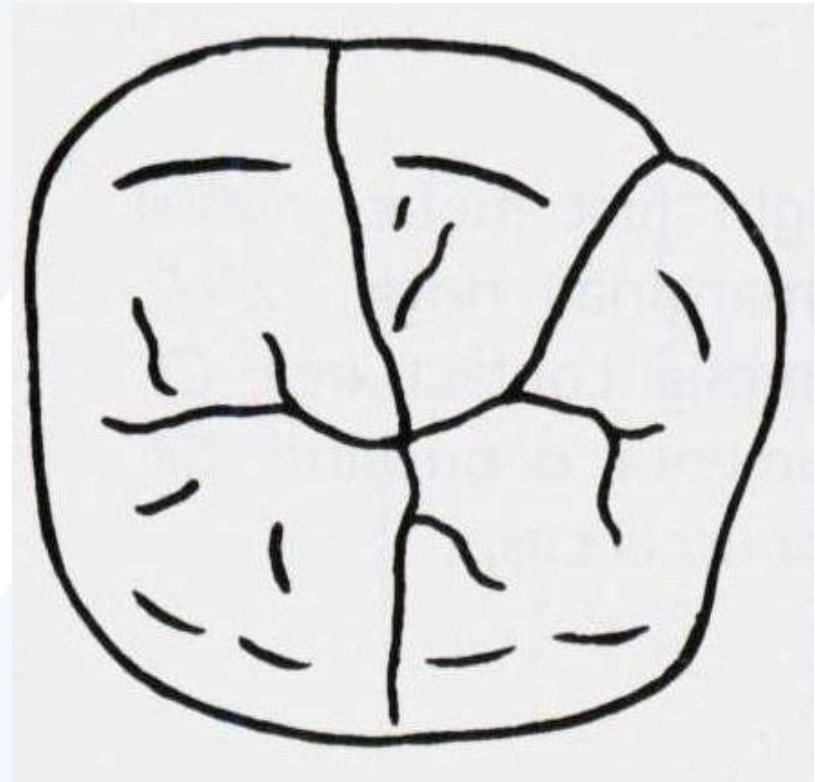
Occlusal aspect

- Lingual cusp tips are widely separated.



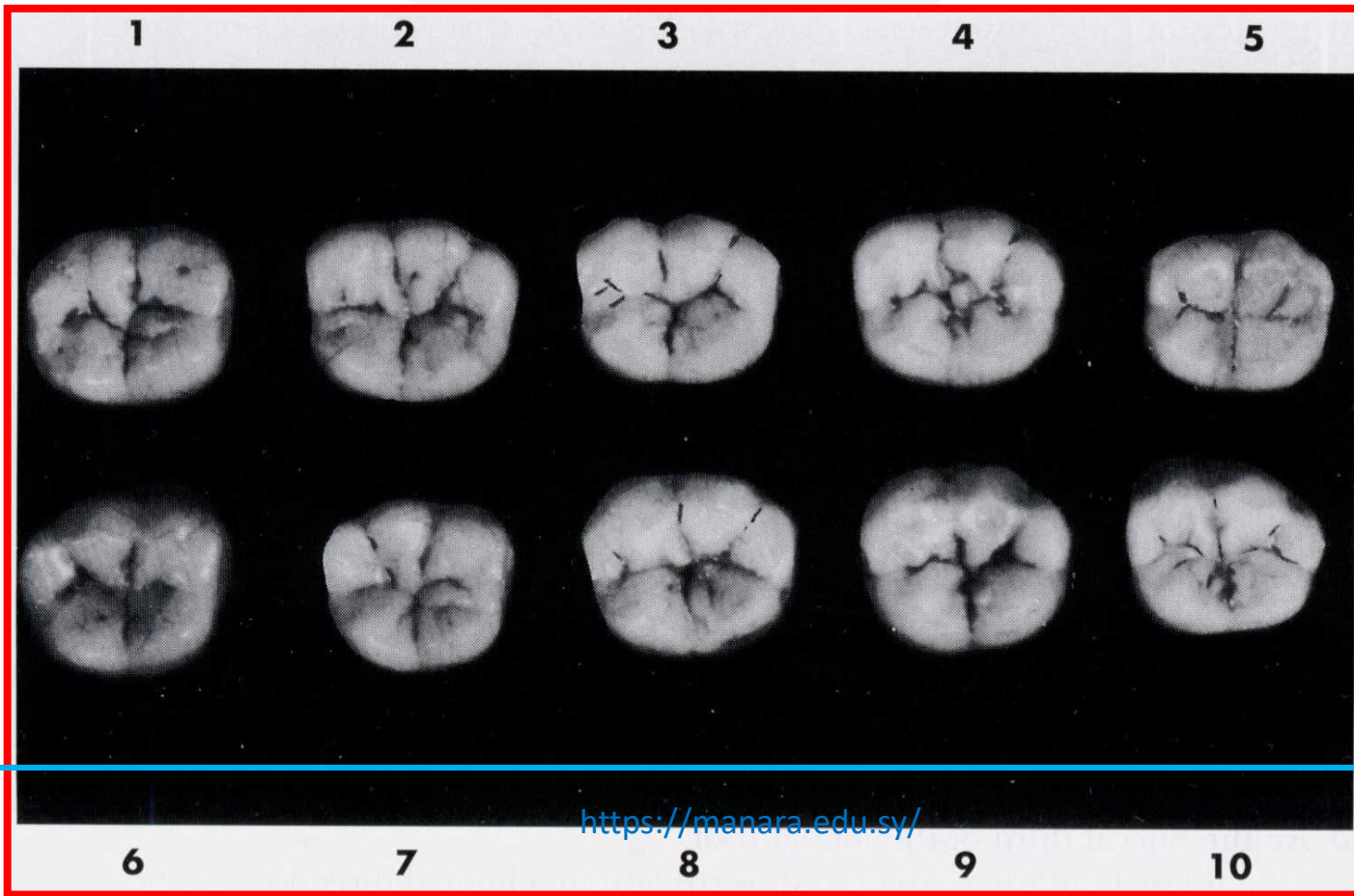
Occlusal aspect

- Buccal groove and distobuccal groove are clearly identified.



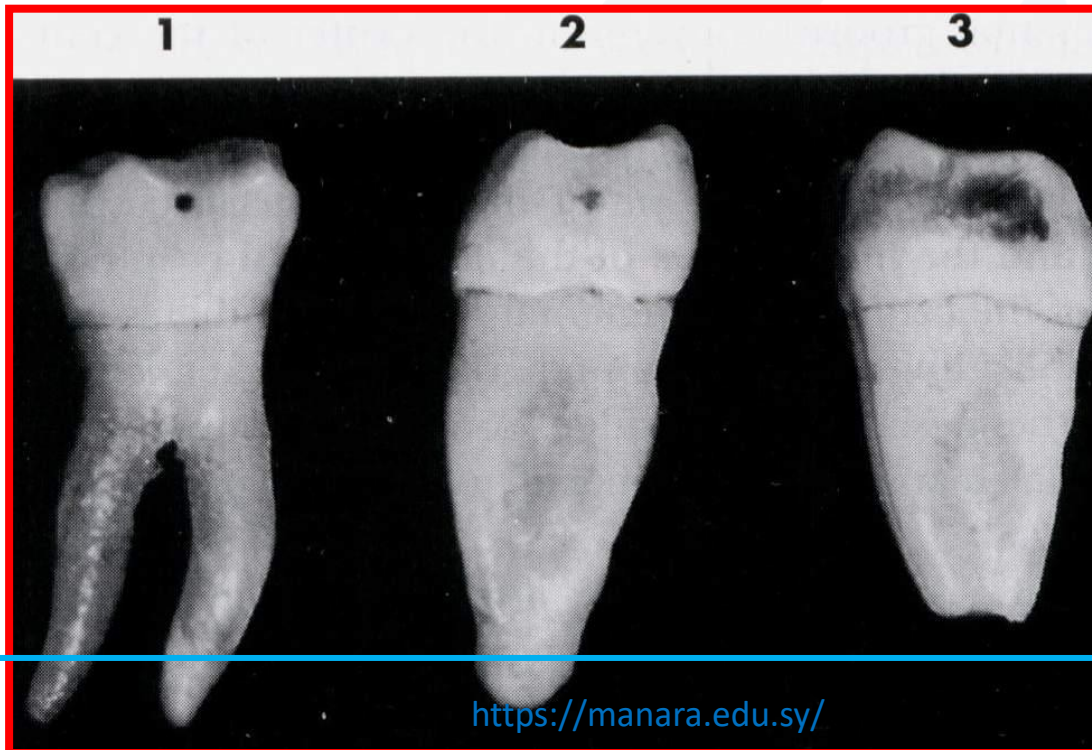
Ten typical specimens

•Occlusal Aspect



specimens with uncommon variations

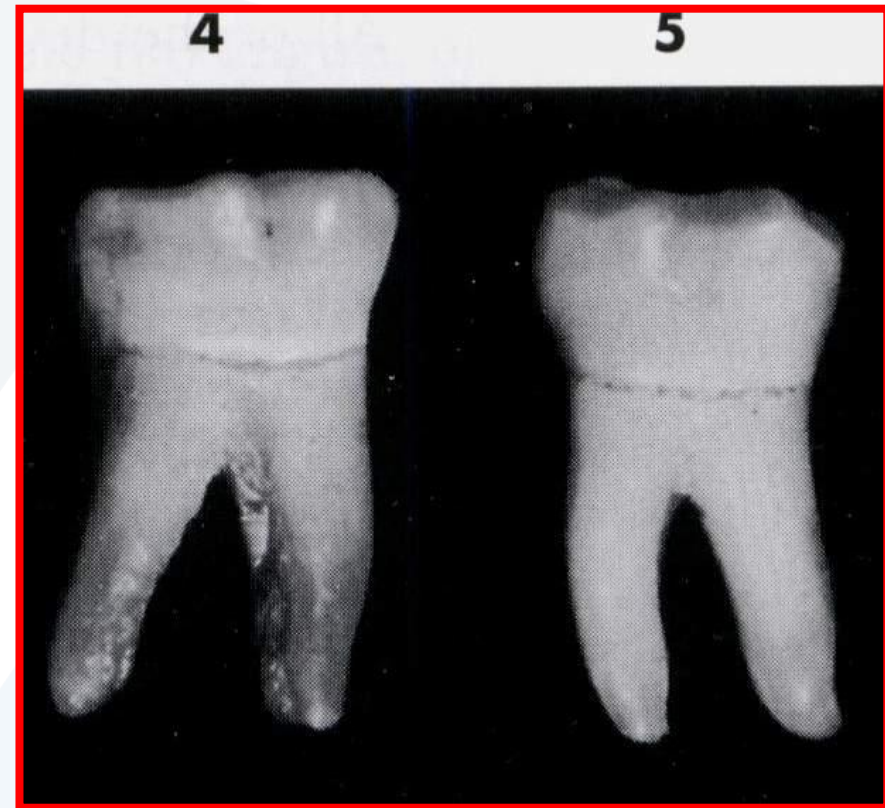
- 1- roots extremely long, crown small .
- 2-Mesial root longer than average with rounded apex.
- 3-Crown very wide buccolingually ,roots short.



specimens with uncommon variations

4 - roots short .

5 -Crown has no buccal developmental groove.



specimens with uncommon variations

- 6 - Crown and roots are poorly formed .
- 7 -Roots dwarfed.
- 8 -roots short ,crown wide buccolingually.



specimens with uncommon variations

9- Crown and roots oversize buccolingually.

10-Extra tubercle or cusp attached to mesiolingual lobe .

