

Supplement to
**DESCRIPTION OF A NEW LATE MIOCENE AMERICAN BADGER
(TAXIDIINAE) UTILIZING HIGH-RESOLUTION X-RAY COMPUTED
TOMOGRAPHY**

by PAMELA R. OWEN*

*Vertebrate Paleontology Laboratory, The University of Texas at Austin, J.J. Pickle Research Campus, Bldg. 6, 10100 Burnet Road, Austin, TX 78758 USA. E-mail: powen@mail.utexas.edu.

Anatomical abbreviations and synonyms for cranial bones labelled on the HRXCT images.

| BONES | | | |
|----------------|---------------|--|--|
| Abbrev. | Name | NAV synonym (Frewein <i>et al.</i> 1994) | Other synonyms |
| AS | alisphenoid | Os basisphenoidale ala | 1. great wings (alae magnae) of the sphenoid bone 2. alae temporales s. majores 3. temporal wings of the sphenoid bone |
| BO | basioccipital | Os occipitale pars basilaris | 1. os basioccipitale 2. basilar part of the occipital bone |
| BS | basisphenoid | Os basisphenoidale | 1. postsphenoid |
| ECT | ectotympanic | Os temporale pars tympanica | 1. tympanic (Hunt 1974) |

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|------------|--|--------------------------------|---|
| ENT | entotympanic (no differentiation between rostral and caudal) | Os temporal pars endotympanica | |
| ET | ethmoid | Os ethmoidale | |
| EO | exoccipital | Os occipitale pars lateralis | 1. lateral parts (partes laterales) of the occipital bone |
| FR | frontal | Os frontale | |
| IN | incus | | 1. quadrate |
| JU | jugal | Os zygomaticum | 1. zygomatic bone 2. malar bone |
| LA | lacrimal | Os lacrimale | 1. lachrymal |
| ML | malleus | | 1. articular |
| MT | maxilloturbinate | Os conchae nasalis ventralis | 1. inferior concha 2. concha nasalis inferior 3. inferior turbinated bone |
| MX | maxilla | Maxilla | |
| NA | nasal | Os nasale | |
| OC | occipital = fused exoccipitals, basioccipital and supraoccipital | Os occipitale | |
| OS | orbitosphenoid | Os presphenoidale ala | 1. small wings (alae parvae) of the sphenoid bone 2. orbital wings (alae orbitales) of the sphenoid bone |
| PA | parietal | Os parietale | |

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|------------|----------------|----------------------------------|--|
| PE | petrosal | Os temporal pars petrosa | 1. petrosum 2. pyramis 3. pyramid 4. petrous bone |
| PL | palatine | Os palatinum | 1. palate bone |
| PRS | presphenoid | Os presphenoidale | |
| PMX | premaxilla | Os incisivum | 1. incisive bone 2. intermaxillary 3. Os intermaxillare |
| PT | pterygoid | Os pterygoideum | 1. pterygoid processes (processus pterygoidei) of the sphenoid bone |
| SO | supraoccipital | Os occipitale squama occipitalis | 1. squamous part (pars squamosa) of the occipital bone |
| SQ | squamosal | Os temporale pars squamosa | 1. squama (squama temporalis) and mastoid portion (pars mastoidea)[in part] of the temporal bone (os temporalis) |
| TB | tympanic bulla | Bulla tympanica | 1. auditory bulla |
| VO | vomer | Vomer | |

Anatomical abbreviations and synonyms for processes, foramina, and other features labelled on the HRXCT images.

| PROCESSES, FORAMINA, AND OTHER FEATURES | | | |
|--|--------------------------------------|---|---|
| Abbrev. | Name | NAV synonym (Frewein <i>et al.</i> 1994) | Other synonyms |
| acf | anterior carotid foramen | Canalis caroticus | 1. internal carotid foramen (Evans 1993) |
| cc | cranial cavity | Cavum cranii | |
| cg | crista galli (of the ethmoid) | Crista galli | |
| chg | chiasmatic groove | Sulcus chiasmatis | |
| co | cochlea | Cochlea | |
| coc | condyloid canal | Canalis condylaris | |
| cp | cribriform plate of the ethmoid bone | Lamina cribrosa | |
| cpf | caudal palatine foramen | Foramen palatinum caudale | 1. posterior palatine foramen (Bryant <i>et al.</i> 1993) |
| cre | crista conchalis | Crista conchalis | 1. conchal crest (Evans 1993) 2. crest of the ventral concha |
| cw | cochlear window | Fenestra cochleae | 1. apertura fossulae fenestrae cochleae (MacPhee 1981) 2. fenestra rotunda |
| dnm | dorsal nasal meatus | Meatus nasi dorsalis | |
| ds | dorsum sellae | Dorsum sellae turcicae | |

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|-------------|--|-----------------------------------|--|
| eacc | external aperture of carotid canal (Nickel <i>et al.</i> 1986) | Canalis caroticus | 1. foramen lacerum (Evans 1993) 2. foramen lacerum medius (Mitchell and Tedford 1973) 3. foramen lacerum medium (Hough 1948) |
| eam | external auditory meatus | Meatus acusticus externis | |
| ec | ectoturbinates (undifferentiated) of the ethmoid | Ectoturbinalia | |
| ec 1 | ectoturbinate 1 of the ethmoid | | |
| efm | ethmoid foramen | Foramen ethmoidale | |
| en | endoturbinates (undifferentiated) of the ethmoid bone | Endoturbinalia | |
| en I | endoturbinate I | Concha nasalis dorsalis | 1. nasoturbinal 2. superior concha |
| ena | external nares | Apertura nasi ossea | 1. bony nasal aperture 2. anterior nares 3. piriform aperture |
| eoc | external occipital crest | Crista occipitalis externa | |
| eop | external occipital protuberance | Protuberantia occipitalis externa | |
| et | undifferentiated endo | Ethmoturbinalia | 1. ethmoturbinates |

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|-------------|---|---------------------------|--|
| etr | and ectoturbinates epitympanic recess | Recessus epitympanicus | |
| fc | facial canal | Canalis facialis | 1. canal for facial nerve |
| fmg | foramen magnum | Foramen magnum | |
| fmov | fossa for m. obliquus ventralis of the eye | | 1. fossa muscularis (Davis 1964) |
| fo | foramen ovale | Foramen ovale | 1. oval foramen |
| fr | foramen rotundum | Foramen rotundum | 1. round foramen |
| fs | frontal sinus | Sinus frontalis | |
| gf | glenoid fossa | Fossa mandibularis | 1. mandibular fossa |
| hf | hypoglossal foramen | Canalis n. hypoglossi | |
| hyf | hypophyseal fossa | Fossa hypophysialis | 1. fossa hypophyseos |
| iam | internal auditory meatus | Meatus acusticus internus | 1. internal acoustic meatus |
| icc | internal carotid canal | Canalis caroticus | |
| ioc | infraorbital canal | Canalis infraorbitalis | |
| iof | infraorbital foramen | Foramen infraorbitale | |
| ipf | internal plate of the frontal | | 1. lamina interna of the frontal bone (Nickel <i>et al.</i> 1986) |
| ina | internal nares | | 1. choanae |
| jf | jugular foramen | Foramen jugulare | |

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|------------|--|---|---|
| jp | jugular process | Processus jugularis | 1. paroccipital process 2. paracondylar process |
| ldc | lambdoidal crest | Crista nuchae | 1. nuchal crest |
| lf | lacrimal foramen | | |
| lfs | lacrimal fossa | Fossa sacci lacrimalis | 1. fossa for the lacrimal sac |
| lis | lamella(e) intrasinuales (Nickel <i>et al.</i> , 1986) | Lamella(e) intrasinuales | |
| mbs | minor bullar septum | | 1. partial transverse septum (Flower 1869) 2. pseudoseptum (Hunt 1974) |
| mp | mastoid process | Os temporale, pars petrosa, processus mastoideus | 1. pars mastoidea 2. mastoid part of the petrosal |
| mpf | major palatine foramen | Foramen palatinum majus | 1. anterior palatine foramen |
| mr | maxillary recess | Recessus maxillaris | 1. maxillary sinus (Paulli 1900; Anthony and Iliesco 1926; Davis 1964) |
| mss | mastoid sinus | | |
| mtc | musculotubular canal | Canalis musculotubarius | 1. pars ossea tubae auditivae |
| mxp | maxillary process of premaxilla | | |
| ncs | nasoconchal sinus | | 1. sinus I' (Paulli 1900) |
| npm | nasopharyngeal meatus | Meatus nasopharyngeus | |

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|-------------|---------------------------|------------------------------|---|
| obs | oblique bullar septum | | 1. oblique septum (Segall 1943) 2. pseudoseptum (Hunt 1974) |
| occ | occipital condyle | Condylus occipitalis | |
| of | orbital fissure | Fissura orbitalis | 1. sphenorbital fissure (Novacek 1986) 2. foramen lacerum anterius (Reighard <i>et al.</i> 1935) 3. foramen lacerum anticum (Pocock 1921) 4. sphenorbital foramen 5. sphenoidal fissure |
| opc | optic canal | Canalis opticus | |
| opf | optic foramen | | |
| ot | osseous tentorium | Osseous tentorium | 1. intracranial osseous lamina (Wyss and Flynn 1993) |
| pac | parasagittal crest | | |
| pc | petrosal crest | Crista partis petrosae | |
| pcf | posterior carotid foramen | | |
| pclp | posterior clinoid process | Processus clinoides caudalis | |
| pcp | paroccipital process | Processus paracondylaris | 1. paracondylar process 2. jugular process |
| pf | palatal fissure | Fissura palatina | 1. incisive foramina (Novacek 1986) 2. anterior palatine foramina (Reighard <i>et al.</i> 1935; Davis 1964) |
| pgf | postglenoid foramen | Foramen retroarticulare | 1. retroarticular foramen 2. post-glenoid foramen |

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|-------------|---|------------------------------------|---|
| pgp | postglenoid process | Processus retroarticularis | |
| plf | posterior lacerate foramen | Foramen lacerum | 1. posterior lacerum posticum |
| plp | palatine process of the premaxilla | | |
| pop | post-orbital process of the frontal | Os frontale, processus zygomaticus | 1. processus postorbitalis 2. zygomatic process of the frontal |
| pp | perpendicular plate of the ethmoid bone | Lamina perpendicularis | 1. mesethmoid |
| pr | promontorium of petrosal | | |
| sds | sulcus for dorsal sagittal sinus | Sulcus sinus sagittalis dorsalis | 1. sulcus for superior sagittal sinus |
| sdps | sulcus for dorsal petrosal sinus | Sulcus sinus petrosi dorsalis | 1. sulcus for superior petrosal sinus |
| smf | stylomastoid foramen | Foramen stylomastoideum | |
| spf | sphenopalatine foramen | Foramen sphenopalatinum | |
| spn | septal process of the nasal | Processus septalis | |
| ss | sphenoidal sinus | Sinus sphenoidalis | |
| ssc | semicircular canal | Ductus semicirculares | |
| ssf | frontal sinus septum | Septum sinuum frontaliuum | |
| ssg | sulcus for the sigmoid sinus | | |
| sst | sulcus for the transverse sinus | Sulcus sinus transversi | |

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|-------------|--|--------------------------------|--|
| svps | sulcus for ventral petrosal sinus | Sulcus sinus petrosi ventralis | 1. sulcus for inferior petrosal sinus |
| tbs | transverse bullar septum | | 1. transverse septum (Segall 1943) 2. posterior rafter (Pocock 1921) 3. pseudoseptum (Hunt 1974) |
| tc | temporal canal | | |
| tm | temporal meatus | Meatus temporalis | |
| ts | tuberculum sellae | | |
| tsc | transverse sinus canal | Canalis sinus transversi | |
| ves | vestibule | | |
| vnm | ventral nasal meatus | Meatus nasi ventralis | |
| vps | vagina processus styloidei (pit for tympanohyal) | Vagina processus styloidei | 1. hyoid fossa (Davis 1964) |
| zps | zygomatic process of the squamosal | Processus zygomaticus | |

Anatomical abbreviations for dentition and dental structures labelled on the HRXCT images.

UPPER DENTITION AND DENTAL STRUCTURES

| Abbrev. | Name | Abbrev. | Name |
|----------------|--|----------------|---|
| C | upper canine | P2 | upper 2nd premolar |
| Cr | root of upper canine | P2ra | anterior root of upper 2nd premolar |
| I1 | upper 1st incisor | P2rp | posterior root of upper 2nd premolar |
| I1r | root of upper 1st incisor | P3 | upper 3rd premolar |
| I2 | upper 2nd incisor | P3ra | anterior root of upper 3rd premolar |
| I2r | root of upper 2nd incisor | P3rp | posterior root of upper 3rd premolar |
| I3 | upper 3rd incisor | P4 | upper 4th premolar |
| I3r | root of upper 3rd incisor | P4mc | metacone of upper 4th premolar |
| M1 | upper 1st molar | P4ms | metastyle of upper 4th premolar |
| M1mc | metacone of upper 1st molar | P4pa | paracone of upper 4th premolar |
| M1pa | paracone of upper 1st molar | P4pr | protocone of upper 4th premolar |
| M1ps | parastyle of upper 1st molar | P4ps | parastyle of upper 4th premolar |
| M1rab | anterior buccal (labial) root of upper 1st molar | P4rab | anterior buccal (labial) root of upper 4th premolar |
| M1rli | lingual root of the upper 1st molar | P4rli | lingual root of upper 4th premolar |

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