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OSTEOLOGICAL REMAINS OF REPTILES FROM FRIULI REGION (NE ITALY) IN THE PALAEONTOLOGICAL COLLECTIONS OF THE MUSEO FRIULANO DI STORIA NATURALE

RESTI OSSEI FOSSILI DI RETTILI DEL FRIULI (ITALIA
NORDORIENTALE) NELLE COLLEZIONI PALEONTOLOGICHE
DEL MUSEO FRIULANO DI STORIA NATURALE

Riassunto breve - Nelle collezioni paleontologiche del Museo Friulano di Storia Naturale di Udine sono conservati 1126 reperti fossili di rettili (Sauropsida), che coprono un intervallo di tempo che va dal Triassico Medio al Miocene (247-15 milioni di anni fa), provenienti dal Friuli (province di Udine e Pordenone) e rinvenuti soprattutto negli ultimi 30 anni. La maggior parte risalgono al Triassico e in particolare all'Anisico (526 esemplari in gran parte provenienti dalla Val Aupa nelle Alpi Carniche), Carnico (547 esemplari, provenienti per lo più da Fusesa e Dogna nelle Alpi Carniche e Giulie, rispettivamente) e Norico (22 esemplari provenienti dalla Dolomia di Forni del versante nord delle Prealpi Carniche). Sono presenti anche alcuni esemplari giurassici (Prealpi Carniche), cretacei (Prealpi Giulie) e miocenici (Prealpi Carniche). I cladi più rappresentati sono quelli dei sauropsidi costieri o francamente marini (placodonti, eusauroterigi, ittoterigi, tanistrokeidi e coccodilliformi marini), ma anche *taxa* che sono terrestri o potenzialmente tali (pterosauri e altri arcosauriformi). Tra i reperti sono presenti gli ologotipi del placodonte *Protenodontosaurus italicus* PINNA, 1990, del pistosauride *Bobosaurus forojuliensis* DALLA VECCHIA, 2006, del drepanosauride *Megalancosaurus preonensis* CALZAVARA, MUSCIO & WILD, 1981 e degli pterosauri *Preondactylus buffarinii* WILD, 1984 e *Carniadactylus rosenfeldi* (DALLA VECCHIA, 1995).

Parole chiave: Rettili fossili, Mesozoico, Triassico, Anisico, Ladinico, Carnico, Norico, Giurassico, Cretaceo, Miocene, Alpi Carniche, Prealpi Carniche, Alpi Giulie, Prealpi Giulie, Friuli.

Abstract - The palaeontological collections of the Museo Friulano di Storia Naturale di Udine (Friulian Museum of Natural History, Udine) include over 1126 specimens of fossil reptiles (Sauropsida), ranging the interval Middle Triassic-Miocene (247-15 million years ago), that have been found in Friuli (Friuli Venezia Giulia Autonomous Region, NE Italy) mostly during the last 30 years. Most of them date back to the Triassic Period (252.17-201.3 million years ago) and in particular to the Anisian (526 specimens, mostly from Aupa Valley in the Carnic Alps), Carnian (547 specimens, mostly from Fusesa and Dogna localities of Carnic Alps and Julian Alps, respectively) and Norian (22 specimens from the Forni Dolostone of the northern side of the Carnic Prealps) Ages. A few Jurassic (Carnic Prealps), Cretaceous (Julian Prealps) and Miocene (Carnic Prealps) specimens are also present. The most represented clades are those of coastal or frankly marine sauropsids (placodonts, eusauropterygians, ichthyopterygians, tanystropheids and marine crocodyliformes), but also terrestrial taxa or potentially such (pterosaurs and other archosauriformes) are represented. The collection includes the holotypes of the placodont *Protenodontosaurus italicus* PINNA, 1990, the pistosaurid *Bobosaurus forojuliensis* DALLA VECCHIA, 2006, the drepanosaurid *Megalancosaurus preonensis* CALZAVARA, MUSCIO & WILD, 1981, and the pterosaurs *Preondactylus buffarinii* Wild 1984 and *Carniadactylus rosenfeldi* (DALLA VECCHIA, 1995).

Key words: Fossil reptiles, Mesozoic, Triassic, Anisian, Ladinian, Carnian, Norian, Jurassic, Cretaceous, Miocene, Carnic Prealps, Carnic Alps, Julian Alps, Julian Prealps, Friuli.

Introduction

The palaeontological collections of the Museo Friulano di Storia Naturale of Udine (MFSN; a museum of the municipality of Udine, Friuli Venezia Giulia Autonomous Region, NE Italy) dramatically increased in last 35 years thanks to the occasional discoveries made

by amateurs and Museum collaborators, by the field work undertaken by the MFSN (mainly in the 80-90ies of the last century), and by the custody of large collections seized from illegal private owners by the Italian State authorities.

These specimens caused a significative increase in the knowledge of the Palaeontology of Friuli (Provinces of

Udine and Pordenone and part of the Gorizia Province, northeastern Italy), mainly regarding Mesozoic vertebrates (see DALLA VECCHIA 2008b). At the beginning, the new studies on these specimens regarded mainly the Norian (Late Triassic) vertebrates from the Carnic Prealps (surroundings of Preone and other localities of the Upper Tagliamento Valley; see DALLA VECCHIA 2012 and references therein). However, studies started to involve also the Carnian (Late Triassic) Fusina (near Tolmezzo; see DALLA VECCHIA 2000b, 2008b and DALLA VECCHIA & CARNEVALE 2011) and Dogna (see DALLA VECCHIA, 2006a, 2008b) localities and, subsequently, the upper Anisian (Middle Triassic) Aupa Valley locality (see DALLA VECCHIA 2006c, 2008b).

This is a catalogue of the 1123 specimens of reptiles deposited at the MFSN. Three specimens deposited at the Museo Geologico della Carnia di Ampezzo (Udine) are also added to the list. Only bone remains are considered here. Paleontological fossils are not reported; they have recently been treated by DALLA VECCHIA (2013b).

Fossils are here listed in chronostratigraphic order, according to their geographic provenance, systematic identification and catalogue number. Stratigraphic information is also given, when available. Occasionally,

distinct sites, but coeval and with similar content are grouped together.

Each specimen has an inventory number; the acronym of the Museo Friulano di Storia Naturale - MFSN - is never reported, whereas that of the Museo Geologico di Ampezzo (MGC) is reported for the three specimens from this Institution.

Some inventory numbers refer to two or more bone fragments or to rock samples containing more than one bone remain.

Systematic attribution is sometimes updated here with respect to the official inventory of the Museum collections (which is mainly for bureaucratic use). When a specimen has been mentioned, described and/or figured in a scientific publication, the relative information is reported. Anatomical and systematic identification of unpublished specimens was done for inventory purposes only, by two different persons (the authors) and in different moments during the last two decades, therefore it was expeditious and is just preliminary. Furthermore, many specimens are still unprepared for study and this is a fundamental limit to the possibility of a correct systematic identification.

If the study of a specimen is in progress, this is reported to avoid future misunderstandings.



Fig. 1 - MFSN 19385, partial vertebral column of the ichthyopterygian *Mixosaurus* sp. from the Ambruseit Brook, Arta Terme (Carnic Alps), Middle Triassic (upper Anisian). Scale bar equals 10 mm.
- MFSN 19385, parte della colonna vertebrale dell'ittiottterigio *Mixosaurus* sp. rinvenuto nel Rio dell'Ambruseit, Arta Terme (Alpi Carniche), Anisico superiore. La scala è lunga 10 mm.

1. Middle Triassic - Anisian

1.1 ARTA TERME, MOUNT TERSADIA

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Nothosauria, Nothosauridae, Nothosaurus

15611 *Nothosaurus* sp. - it includes a tooth crown and a fragmentary rib. The specimen comes from the Arvenis Member of the Serla Formation, referred to the Aegean-?Bithynian (lower Anisian; VENTURINI et al. 2001, 2002). Mentioned in SIRNA et al. (1994); described, determined and figured in RIEPPEL & DALLA VECCHIA (2001); figured in DALLA VECCHIA (2008b).

1.2 ARTA TERME, PIEDIM, AMBRUSEIT BROOK

Reptilia, Diapsida, Sauropterygia, Nothosauroida

27267 ?*Nothosauroida* indet. - a segment of the vertebral column composed of seven articulated vertebrae in cross-section and some dorsal rib impressions. The specimen comes from the Dolomia del Popera Formation, referred to the Pelsonian. Described and figured in DALLA VECCHIA (2008b).

1.3 ARTA TERME, PIEDIM, AMBRUSEIT BROOK

An outcrop of the Dont Formation (lower Pelsonian) crossing the bed of the Ambruseit Brook yielded a few ichthyopterygian remains.

Reptilia, Diapsida, Ichthyopterygia, Ichthyosauria, Mixosauridae

19385 *Mixosaurus* sp. - a cross-sectioned caudal portion of the vertebral column formed by 15 articulated vertebrae with ribs and a few other bone fragments (Fig. 1). Mentioned in SIRNA et al. (1994); described, determined and figured in RIEPPEL & DALLA VECCHIA (2001); figured in DALLA VECCHIA (2008b).

Reptilia, Diapsida, Ichthyopterygia

20571 ?*Ichthyopterygia* - girdle element fragment.

1.4 ARTA TERME, PLAN DI COCÉS LOCALITY

Two specimens come from a lens of nodular limestone with ammonoids belonging to *Balatonicus* Sub-zone of ammonoid biostratigraphy, indicating a Pelsonian age.

Reptilia, Diapsida, Ichthyopterygia, Ichthyosauria, Omphalosauridae

MGC 332390 *Tholodus schmidi* - left maxilla (Fig. 2A) and part of a right mandibular ramus (Fig. 2B), both bearing the characteristic teeth of *Tholodus schmidi* (Fig. 2C-D). The two specimens were originally preserved in a single block and have been extracted from the rock in order to study them in detail.

MGC 332391 *Tholodus schmidi* - the specimen includes the left humerus, some fragmentary vertebrae, some

cervical ribs and some phalanges (Fig. 2E). It probably belongs to the same individual of MGC 332390, because they were found very close to each other. Both specimens described, determined and figured in DALLA VECCHIA (2004b); figured also in DALLA VECCHIA (2008b).

1.5 FORNI DI SOTTO, MOUNT BIVERA, PIAN DELLE STREGHE LOCALITY

All the following specimens were found in the Dont Formation, *Balatonicus* subzone, Pelsonian.

Reptilia, Diapsida, Ichthyopterygia

48285 *Ichthyopterygia* indet. - three small vertebral centra, rib fragments and some gastralia. To be prepared.

48286 *Ichthyopterygia* indet. - some bone fragments including vertebral and rib fragments. To be prepared.

48287 *Ichthyopterygia* indet. - dorsal rib, some vertebral centra, many gastralia and some other bone fragments. To be prepared.

48288 *Ichthyopterygia* indet. - fragment of a dentigerous bone with one in situ tooth. To be prepared.

48289 *Ichthyopterygia* indet. - three vertebral centra and some bone fragments.

Specimens 48285-89 come from the same site, a debris accumulation located in the western part of Pian delle Streghe toward Casera Giaveada locality, and may belong to a single individual.

Reptilia, Diapsida, Ichthyopterygia, Ichthyosauria, Shastasauridae, Cymbospondylus

19387-90 and 20572 ?*Cymbospondylus* - the proximal part of a rib (19387), an isolated neural spine (19388), an isolated and fragmentary, posterior dorsal vertebral centrum (19389), a complete, isolated, and posterior dorsal vertebral centrum (19390; Fig. 3A) and two fragments of rib shafts (20572). These bones were not in articulation, but were preserved in association and probably belong to the same individual. Mentioned in SIRNA et al. (1994); figured, described and determined in RIEPPEL & DALLA VECCHIA (2001); 19390 is figured also in DALLA VECCHIA (2008b).

Reptilia, Diapsida, Ichthyopterygia, Ichthyosauria, Shastasauridae, Shastasaurus

19386 ?*Shastasaurus* - partial dorsal vertebral centrum (Fig. 3B). Bivera Formation, lower Illyrian, upper Anisian. Mentioned in SIRNA et al. (1994); figured, described and determined in RIEPPEL & DALLA VECCHIA (2001); figured in DALLA VECCHIA (2008b).

1.6 FORNI DI SOTTO, EASTERN FLANK OF MOUNT BIVERA

Reptilia

43831 *Reptilia* indet. - long bone fragment. Indeterminate unit (not from the Dont or Bivera Formations).

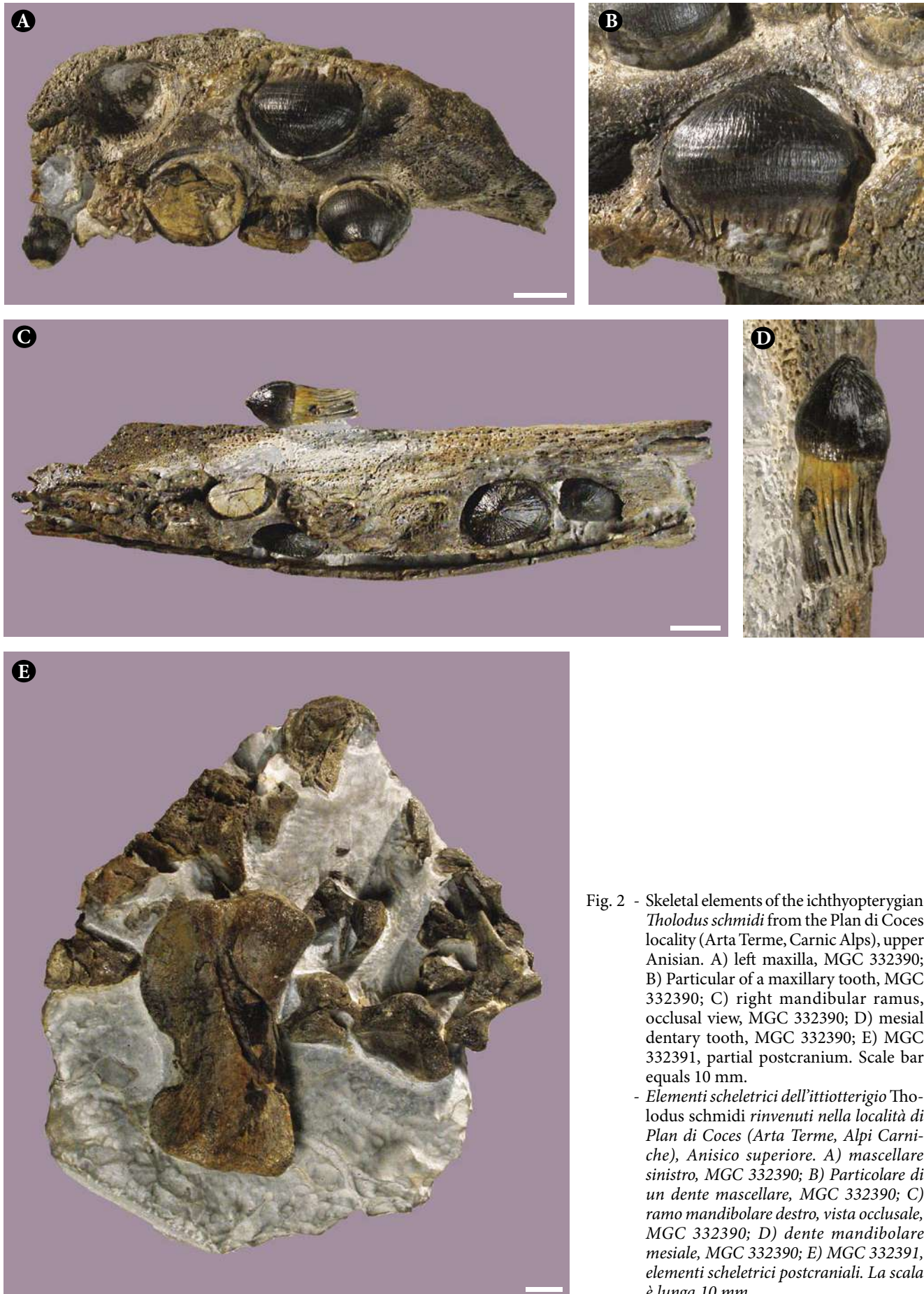


Fig. 2 - Skeletal elements of the ichthyopterygian *Tholodus schmidi* from the Plan di Coces locality (Arta Terme, Carnic Alps), upper Anisian. A) left maxilla, MGC 332390; B) Particular of a maxillary tooth, MGC 332390; C) right mandibular ramus, occlusal view, MGC 332390; D) mesial dentary tooth, MGC 332390; E) MGC 332391, partial postcranium. Scale bar equals 10 mm.

- Elementi scheletrici dell'ittiotterigio *Tholodus schmidi* rinvenuti nella località di Plan di Coces (Arta Terme, Alpi Carniche), Anisico superiore. A) mascellare sinistro, MGC 332390; B) Particolare di un dente mascellare, MGC 332390; C) ramo mandibolare destro, vista occlusale, MGC 332390; D) dente mandibolare mesiale, MGC 332390; E) MGC 332391, elementi scheletrici postcraniali. La scala è lunga 10 mm.

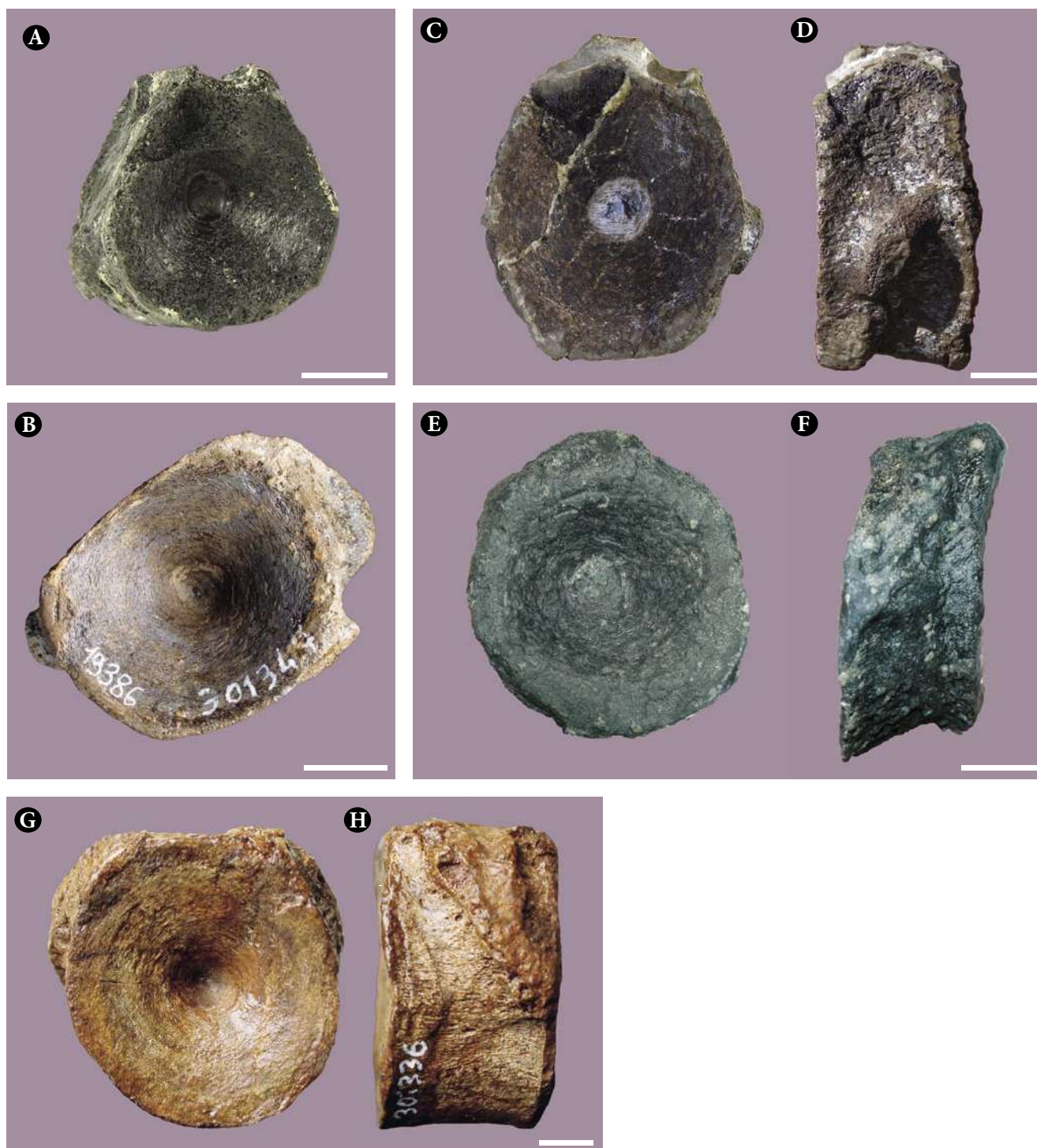


Fig. 3 - Ichthyopterygian vertebral centra from the Middle Triassic. A) MFSN 19390, dorsal centrum of *?Cymbospondylus*, Pian delle Streghe locality (Mount Bivera, Carnic Alps), upper Anisian; B) MFSN 19386, dorsal centrum of *?Shastasaurus*, Pian delle Streghe locality (Mount Bivera, Carnic Alps), upper Anisian; C-D) MFSN 37561, posterior dorsal centrum of an indeterminate ichthyopterygian in cranial (C) and left lateral (D) views, Aupa Valley (Moggio Udinese, Carnic Alps), upper Anisian; E-F) MFSN 46612, dorsal centrum of an indeterminate ichthyopterygian in cranial (E) and left lateral (F) views, Aupa Valley (Moggio Udinese, Carnic Alps), upper Anisian; G-H) MFSN 15275, dorsal vertebral centrum of *?Cymbospondylus*, in cranial (G) and right lateral (H) views, Clap di Val locality (Forni di Sotto), upper Ladinian. Scale bar equals 10 mm.

- Centri vertebrali di ittiopterigi del Triassico medio. A) MFSN 19390, centro di una vertebra dorsale di *?Cymbospondylus*, Pian delle Streghe (Monte Bivera, Alpi Carniche), Anisico superiore; B) MFSN 19386, centro di una vertebra dorsale di *?Shastasaurus*, Pian delle Streghe (Monte Bivera, Alpi Carniche), Anisico superiore; C-D) MFSN 37561, centro di una vertebra dorsale distale di un ittiopterigio indeterminato in vista craniale (C) e laterale sinistra (D), Val Aupa (Moggio Udinese, Alpi Carniche), Anisico superiore; E-F) MFSN 46612, centro di una vertebra dorsale di un ittiopterigio indeterminato in vista craniale (E) e laterale sinistra (F), Val Aupa (Moggio Udinese, Alpi Carniche), Anisico superiore; G-H) MFSN 15275, centro di una vertebra dorsale di *?Cymbospondylus* in vista craniale (G) e laterale destra (H), Clap di Val (Forni di Sotto), Ladinico superiore. La scala è lunga 10 mm.

1.7 FORNI DI SOTTO, NORTH-EASTERN FLANK OF MOUNT BIVERA, CHIARANDA BROOK

Reptilia, Diapsida, Ichthyopterygia, Ichthyosauria, Mixosauridae

19644 *Mixosaurus* sp. - part of a disarticulated skeleton made mainly of thin dorsal ribs and gastralia. Figured, described and determined in DALLA VECCHIA (2010).

1.8 MOGGIO UDINESE, AUPA VALLEY NEAR SAPS. SITES LISTED IN DALLA VECCHIA (2006C) AND INTEGRATED HERE.

The fossils from this locality occur in the 'torbiditi d'Aupa' Formation and have a late Anisian (Illyrian) age (DALLA VECCHIA 2006c). They were found in different outcrops of the 'torbiditi d'Aupa' located along the Aupa Torrent near the village of Saps and the confluence of the Dell'Andri Brook (sites 1-6 of DALLA VECCHIA 2006c, plus sites 7-8 of DALLA VECCHIA 2010). Other two sites (9-10) were found after 2010.

The main outcrop is site 6, made of large boulders cropping out from the bed and bank of the water streams just downstream respect to the aqueduct building placed at the confluence of the Dell'Andri Brook and the Torrent Aupa (Fig. 4). The localities details are on file with the Museo Friulano di Storia Naturale.

The provenance of some specimens is vague (e.g., near Saps, Torrent Aupa bed, Aupa Valley etc.) and the referral to a specific outcrop is impossible. Some specimens are reported as coming from «Dell'Andri Brook», but probably they are from site 6.

Identification of the unpublished specimens is just tentative and preliminary. The study of these specimens is in progress by F.M. Dalla Vecchia.

Reptilia

31568 ?*Reptilia* indet. - bony 'scale' (Fig. 5A), site 6. Figured in DALLA VECCHIA (2008b).

31569 ?*Reptilia* indet. - bony 'scale' (Fig. 5B), site 6. Figured in DALLA VECCHIA (2008b).

31582 ?*Reptilia* indet. - bony 'scale', site 6.

46789 ?*Reptilia* indet. - dentigerous bone fragment (?mandibula), possibly from a fish, site 6.

46828 ?*Reptilia* indet. - bony 'scale' (Fig. 5C), site 10.

46829 ?*Reptilia* indet. - bony 'scale' (Fig. 5D), site 10.

46830 ?*Reptilia* indet. - bony 'scale', site 10.

46831 ?*Reptilia* indet. - bony 'scale', site 10.

46832 ?*Reptilia* indet. - bony 'scale', site 10.

46833 ?*Reptilia* indet. - bony 'scale', site 6.

46834 ?*Reptilia* indet. - bony 'scale', site 6.

46835 ?*Reptilia* indet. - bony 'scale', site 5.

46836 ?*Reptilia* indet. - bony 'scale', site 7.

46837 ?*Reptilia* indet. - bony 'scale', site 7.

22736 *Reptilia* indet. - partial neural arch, Dell'Andri Brook.

25763 *Reptilia* indet. - bone fragment, site 6. Mentioned in DALLA VECCHIA (2000b).

27268 *Reptilia* indet. - neural arch, Dell'Andri Brook.

27279 *Reptilia* indet. - isolated zygapophysis, near Saps.

31562 *Reptilia* indet. - vertebral centrum fragment, site 6.

31563 *Reptilia* indet. - bone fragment, site 6.

31566 *Reptilia* indet. - bone fragment, site 6.

31570 *Reptilia* indet. - bone fragment, site 6.

31571 *Reptilia* indet. - bone fragment, site 6.

31572 *Reptilia* indet. - bone fragment, Torrent Aupa near Saps.

31597 *Reptilia* indet. - isolate bone fragment, site 6.

31598 *Reptilia* indet. - isolate bone fragment, site 6.

31599 *Reptilia* indet. - isolate bone fragment, site 6.



Fig. 4 - Site 6 of Aupa Valley, large boulders of a bone-bearing horizon within the upper Anisian 'torbiditi d'Aupa' unit cropping out from the debris of the bed and the banks of the water streams just downstream respect to the aqueduct building placed at the confluence of the Dell'Andri Brook and the Torrent Aupa (Moggio Udinese municipality, Carnic Alps).

- Il sito 6 della Val Aupa, grandi massi di un livello con ossa fossili all'interno delle 'torbiditi d'Aupa' (Anisico superiore) che affiorano dal detrito del letto e delle sponde dei corsi d'acqua a valle della costruzione dell'acquedotto situata alla confluenza del Rio Dell'Andri e il Torrente Aupa (Moggio Udinese, Alpi Carniche).

- 31600 Reptilia indet. - isolate zygapophysis, site 6.
 37577 Reptilia indet. - bone fragment, site 6.
 37578 Reptilia indet. - proximal fragment of a haemaphys, site 6.
 44324 Reptilia indet. - two fragmentary ?metapodials or phalanges and two indeterminate bone fragments, site 7.
 46623 Reptilia indet. - long bone of the limbs or unfused caudal rib, site 6.
 46624 Reptilia indet. - long bone of the limbs or unfused caudal rib, site 9.
 46625 Reptilia indet. - bone fragment, site 6.
 46626 Reptilia indet. - vertebra still inside the rock, site 6. To be prepared.
 46627 Reptilia indet. - ?phalanx, site 9.
 46630 Reptilia indet. - nearly complete but misshapen vertebral centrum, site 7.
 46631 Reptilia indet. - epiphysis of a long bone, site 7.
 46632 Reptilia indet. - ?mesopodial, site 7.
 46633 Reptilia indet. - long bone of the limbs (ulna?) or unfused caudal rib, site 7.
 46636 Reptilia indet. - bone fragment, site 5.
 46637 Reptilia indet. - distal vertebral centrum, site 6.
 46638 Reptilia indet. - small skull fragment, site 6.
 46639 Reptilia indet. - nearly complete small vertebral centrum, site 6.
 46641 Reptilia indet. - proximal caudal vertebra, site 7.
 46642 Reptilia indet. - proximal caudal vertebra, site 7.
 46643 Reptilia indet. - ?dorsal vertebra without the apical part of the neural spine, site 7. To be prepared.
 46644 Reptilia indet. - ?dorsal vertebral centrum and base pedicels of the neural arch, site 6.
 46645 Reptilia indet. - vertebral centrum fragment, site 6.
 46646 Reptilia indet. - caudal vertebral centrum with base of the neural arch, site 6.
 46647 Reptilia indet. - ?caudal vertebral centrum, site 6.
 46648 Reptilia indet. - ?caudal vertebral centrum, site 6.
 46649 Reptilia indet. - ?limb bone fragment (humerus?), site 6. To be prepared.
 46650 Reptilia indet. - ?limb bone fragment, site 6. To be prepared.
 46652 Reptilia indet. - bone fragment, site 6.
 46653 Reptilia indet. - skull fragment (squamosal?), site 7.
 46654 Reptilia indet. - fragment of a girdle element (?pubis, ?coracoid), site 6.
 46655 Reptilia indet. - holocephalous dorsal rib fragment, site 5.
 46656 Reptilia indet. - holocephalous dorsal rib fragment, site 6.
 46657 Reptilia indet. - ?skull bone fragment and ?rib fragment, site 7.
 46658 Reptilia indet. - bone fragment with a rough surface (?gastralium), site 6.
 46659 Reptilia indet. - nearly complete medial (V-like) gastralium, site 7.
 46660 Reptilia indet. - metapodial, site 10.

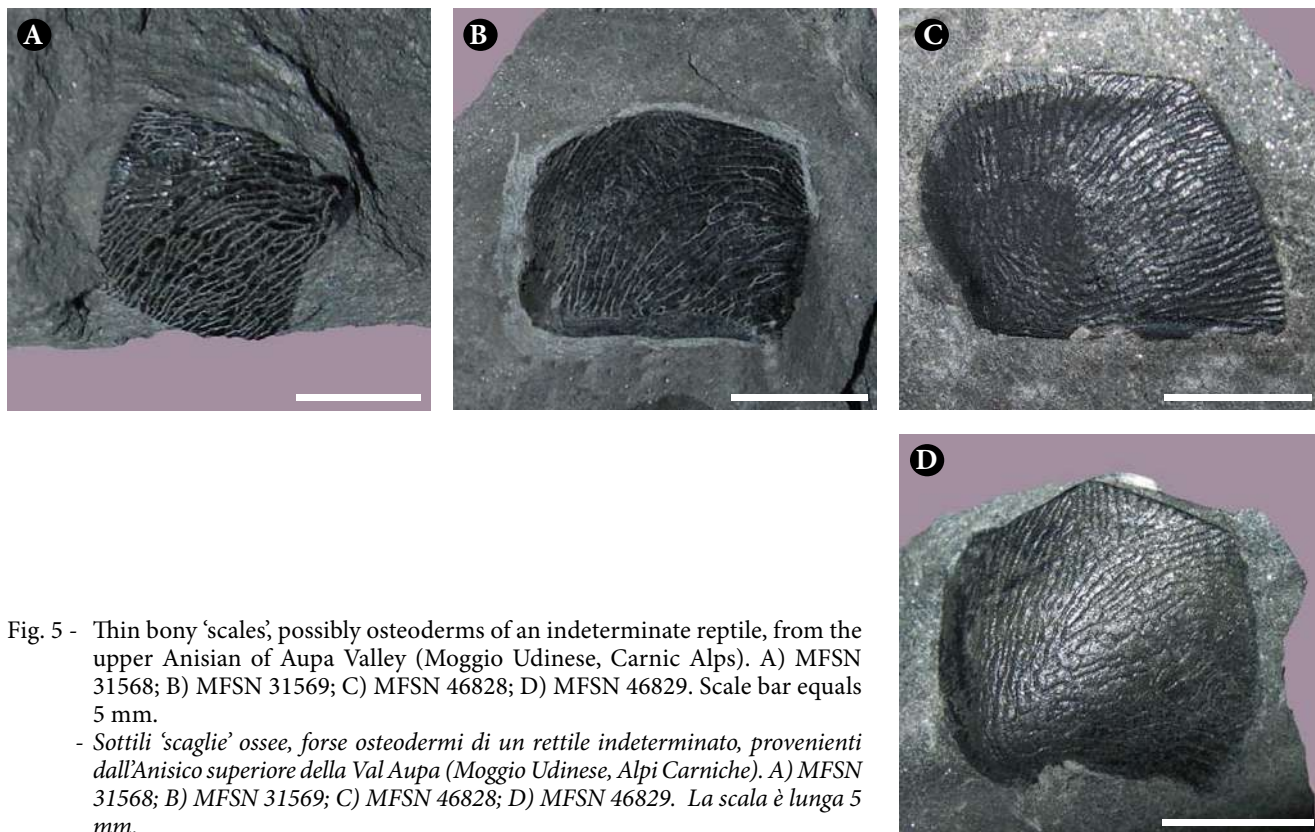


Fig. 5 - Thin bony 'scales', possibly osteoderms of an indeterminate reptile, from the upper Anisian of Aupa Valley (Moggio Udinese, Carnic Alps). A) MFSN 31568; B) MFSN 31569; C) MFSN 46828; D) MFSN 46829. Scale bar equals 5 mm.

- Sottili 'scaglie' ossee, forse osteodermi di un rettile indeterminato, provenienti dall'Anisico superiore della Val Aupa (Moggio Udinese, Alpi Carniche). A) MFSN 31568; B) MFSN 31569; C) MFSN 46828; D) MFSN 46829. La scala è lunga 5 mm.

- 46661 Reptilia indet. - ?sacral rib, site 5.
 46665 Reptilia indet. - metapodial, site 10.
 46666 Reptilia indet. - ?rib/?metapodial/?phalanx fragment, site 5.
 46667 Reptilia indet. - ?rib shaft fragment, site 5.
 46668 Reptilia indet. - ?femur without the proximal part, site 5.
 46670 Reptilia indet. - ?femur without the proximal half, site 5. The same kind of bone as 46668.
 46672 Reptilia indet. - haemapophysis, site 5.
 46674 Reptilia indet. - fragment of a ?metapodial, site 10.
 46675 Reptilia indet. - dorsal rib, site 10. To be prepared.
 46676 Reptilia indet. - lateral gastrarium, site 10.
 46677 Reptilia indet. - fragment of a coracoid, site 10.
 46678 Reptilia indet. - fragment of a metapodial, site 10.
 46680 Reptilia indet. - bone fragment, site 10.
 46681 Reptilia indet. - bone fragment, site 10.
 46682 Reptilia indet. - bone fragment, site 10.
 46683 Reptilia indet. - bone fragment, site 10.
 46684 Reptilia indet. - metapodial, site 10.
 46685 Reptilia indet. - bone fragment, site 10.
 46686 Reptilia indet. - ?osteoderm fragment, site 10.
 46688 Reptilia indet. - fragment of a long bone (humerus?), site 10.
 46690 Reptilia indet. - dorsal rib shaft, site 6.
 46691 Reptilia indet. - dorsal rib, site 7.
 46692 Reptilia indet. - fragment of a dicephalous dorsal rib, site 5.
 46693 Reptilia indet. - bone fragment, site 5.
 46696 Reptilia indet. - ischium, site 7.
 46697 Reptilia indet. - half of an indeterminate bone, site 5.
 46699 Reptilia indet. - metapodial, site 5.
 46700 Reptilia indet. - nearly complete indeterminate long bone with a rough surface, site 5.
 46701 Reptilia indet. - proximal portion of a rib, site 6. To be prepared.
 46703 Reptilia indet. - bone fragment, site 6.
 46704 Reptilia indet. - proximal articular end of a bone, site 6.
 46705 Reptilia indet. - bone fragment, site 6.
 46706 Reptilia indet. - fragment of a ?vertebral centrum, site 6.
 46707 Reptilia indet. - fragment of a long bone, site 6.
 46708 Reptilia indet. - worn vertebral centrum, site 6.
 46709 Reptilia indet. - fragment of a vertebral centrum, site 6.
 46711 Reptilia indet. - bone fragment, site 6.
 46712 Reptilia indet. - small bone fragment, site 6.
 46713 Reptilia indet. - bone fragment, site 6.
 46714 Reptilia indet. - small bone fragment, site 6.
 46715 Reptilia indet. - nearly complete indeterminate bone, site 6.
 46716 Reptilia indet. - bone fragment, site 6.
 46717 Reptilia indet. - ?vertebral centrum fragment, site 6.
 46718 Reptilia indet. - proximal articular head of a long bone (dorsal rib?), site 6.
 46719 Reptilia indet. - fragment of a long bone, site 6.
 46720 Reptilia indet. - bone fragment, site 6.
 46721 Reptilia indet. - small bone fragment, site 6.
 46722 Reptilia indet. - bone fragment, site 6.
 46723 Reptilia indet. - fragment of a long bone, site 6.
 46724 Reptilia indet. - bone fragment, site 6.
 46726 Reptilia indet. - bone fragment, site 6.
 46727 Reptilia indet. - rib shaft fragment, site 6.
 46728 Reptilia indet. - small bone fragment, site 6.
 46729 Reptilia indet. - bone fragment, site 6.
 46730 Reptilia indet. - ?mesopodial, site 6.
 46731 Reptilia indet. - bone fragment, site 6.
 46732 Reptilia indet. - bone fragment, site 6.
 46733 Reptilia indet. - bone fragment, site 6.
 46734 Reptilia indet. - bone fragment, site 6.
 46735 Reptilia indet. - metapodial, site 6.
 46736 Reptilia indet. - fragmentary dorsal rib, site 6. To be prepared.
 46737 Reptilia indet. - metapodial, site 6.
 46738 Reptilia indet. - rib fragment, site 6.
 46739 Reptilia indet. - bone fragment, site 6.
 46740 Reptilia indet. - metapodial, site 6.
 46741 Reptilia indet. - complete zeugopodial element, site 6.
 46742 Reptilia indet. - phalanx, site 6.
 46743 Reptilia indet. - phalanx, site 6.
 46744 Reptilia indet. - bone fragment, site 6.
 46745 Reptilia indet. - rib shaft fragment, site 6.
 46746 Reptilia indet. - distal fragment of a femur, site 7.
 46747 Reptilia indet. - metapodial, site 7.
 46748 Reptilia indet. - metapodial fragment, site 6.
 46749 Reptilia indet. - metapodial fragment, site 6.
 46750 Reptilia indet. - ?metapodial, site 7.
 46751 Reptilia indet. - metapodial, site 7.
 46752 Reptilia indet. - metapodial, site 7.
 46753 Reptilia indet. - metapodial, site 6.
 46754 Reptilia indet. - metapodial, site 7.
 46755/2 Reptilia indet. - metapodial, site 6.
 46756 Reptilia indet. - indeterminate, bizarre and incomplete bone, site 5.
 46757 Reptilia indet. - fragmentary ?quadrate, site 10.
 46758 Reptilia indet. - ?skull fragment, site 6.
 46759 Reptilia indet. - bone fragment, site 6.
 46761 Reptilia indet. - sacral vertebra with fused ribs, in transversal cross-section, site 9.
 46762 Reptilia indet. - gastrarium, site 6.
 46763 Reptilia indet. - ?quadrate, site 6.
 46764 Reptilia indet. - dorsal rib, site 6.
 46765 Reptilia indet. - bone fragment, site 6.
 46766 Reptilia indet. - large girdle bone, site 5. To be prepared.

- 46767 Reptilia indet. - bone fragment (two osteoderms?), site 9.
- 46768 Reptilia indet. - nearly complete vertebra, site 9.
- 46769 Reptilia indet. - complete limb bone, site 9.
- 46770 Reptilia indet. - bone fragment mostly still conglobated in the rock, site 9.
- 46771 Reptilia indet. - bone fragment, site 9.
- 46774 Reptilia indet. - metapodial? small zeugopodial?, site 9.
- 46775 Reptilia indet. - cervical rib?, site 9.
- 46776 Reptilia indet. - bone fragment, site 6.
- 46777 Reptilia indet. - ?skull bone fragment, site 6.
- 46778 Reptilia indet. - fragment of a ?metapodial, site 6.
- 46779 Reptilia indet. - fragment of a limb bone distal end, site 6.
- 46780 Reptilia indet. - long bone fragment, site 6.
- 46781 Reptilia indet. - long bone fragment, site 6.
- 46782 Reptilia indet. - bone fragment, site 6.
- 46783 Reptilia indet. - ?skull bone fragment, site 6.
- 46784 Reptilia indet. - extremity of a long bone, site 6.
- 46785 Reptilia indet. - fragment of a ?skull bone, site 6.
- 46786 Reptilia indet. - bone fragment, site 6.
- 46787 Reptilia indet. - proximal portion of a holocephalous rib, site 6.
- 46788 Reptilia indet. - proximal portion of a holocephalous rib, site 6.
- 46790 Reptilia indet. - fragment of a ?neural arch, site 6.
- 46791 Reptilia indet. - fragment of a neural arch, site 6.
- 46794 Reptilia indet. - worn tooth crown, site 9.
- 48279 Reptilia indet. - dorsal vertebra without neural spine, Aupa Valley. To be prepared.
- 48282 Reptilia indet. - bone fragment, Aupa Valley.
- Reptilia, Diapsida, Ichthyopterygia, Ichthyosauria*
- 37561 Ichthyosauria indet. - centrum of a posterior dorsal vertebra (Fig. 3C-D), site 8. Described, determined and figured in DALLA VECCHIA (2010).
- 46612 Ichthyosauria indet. - dorsal vertebral centrum (Fig. 3E-F), site 9.
- Reptilia, Diapsida, Sauropterygia, Placodontia, Cyamodontoidea*
- 31565 Cyamodontoidea indet. - armour fragment. Described, determined and figured in DALLA VECCHIA (2006c); figured in DALLA VECCHIA (2008b).
- Reptilia, Diapsida, Sauropterygia, Eusauropterygia*
- 31558 Eusauropterygia indet. - left ischium, site 3. Described, determined and figured in DALLA VECCHIA (2006c).
- 31559 Eusauropterygia indet. - left ischium, site 1. Described, determined and figured in DALLA VECCHIA (2006c).
- 31564 Eusauropterygia indet. - proximal caudal vertebral centrum, site 6. Described, determined and figured in DALLA VECCHIA (2006c).
- 46608 Eusauropterygia indet. - fragment of a coracoid, site 9.
- 46609 Eusauropterygia indet. - dorsal vertebral centrum, site 9.
- 46610 Eusauropterygia indet. - neural arch of a dorsal vertebra, site 9.
- 46611 Eusauropterygia indet. - neural arch of a dorsal vertebra, site 5.
- 48277 Eusauropterygia indet. - small ?humerus without the distal end, site 6.
- Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Nothosauria, Nothosauridae, Nothosaurus*
- 37590 ?*Nothosaurus* - neural arch, site 7.
- 46635 ?*Nothosaurus* - mid-caudal vertebral centrum, site 5.
- 46689 ?*Nothosaurus* - nearly complete and deformed dorsal rib, site 6.
- 46695 ?*Nothosaurus* - nearly complete proximal caudal vertebra with unfused ribs, site 9.
- 46702 ?*Nothosaurus* - long ?caudal rib, site 6.
- 46797 ?*Nothosaurus* - tooth crown, site 10. To be prepared.
- 31555 *Nothosaurus* sp. - tooth crown, site 1. Described, determined and figured in DALLA VECCHIA (2006c), figured in DALLA VECCHIA (2008b).
- 31578 *Nothosaurus* sp. - dorsal neural arch, site 6. Described, determined and figured in DALLA VECCHIA (2006c), figured in DALLA VECCHIA (2008b).
- 31586 *Nothosaurus* sp. - left femur, site 6. Described, determined and figured in DALLA VECCHIA (2006c), figured in DALLA VECCHIA (2008b).
- 31881 *Nothosaurus* sp. - large cervical neural arch. Figured in DALLA VECCHIA (2008b).
- 34995/1 *Nothosaurus* sp. - ischium. Determined and figured in DALLA VECCHIA (2008b).
- 37591 *Nothosaurus* sp. - dorsal vertebral centrum, site 7.
- 37592/1 *Nothosaurus* sp. - dorsal vertebral centrum, site 7.
- 37593 *Nothosaurus* sp. - two fragmentary gastralia, site 6.
- 37594 *Nothosaurus* sp. - dorsal rib, site 6.
- 37595 *Nothosaurus* sp. - scapula, site 6.
- 37596 *Nothosaurus* sp. - caudal rib, site 6.
- 37597 *Nothosaurus* sp. - dorsal rib, site 6.
- 37598 *Nothosaurus* sp. - vertebral centrum, site 6.
- 37599 *Nothosaurus* sp. - dorsal vertebral centrum, site 6.
- 37600 *Nothosaurus* sp. - damaged vertebral centrum, site 7.
- 37601 *Nothosaurus* sp. - dorsal vertebral centrum, site 7.
- 37602 *Nothosaurus* sp. - dorsal vertebral centrum, site 7.
- 37603 *Nothosaurus* sp. - incomplete dorsal neural arch, site 7.
- 37604 *Nothosaurus* sp. - incomplete dorsal neural arch, site 6.

- 37605 *Nothosaurus* sp. - coracoid, site 6.
 44323 *Nothosaurus* sp. - coracoid, site 5.
 46669 *Nothosaurus* sp. - astragalus, site 5.
 46698 *Nothosaurus* sp. - almost complete dorsal rib, site 5.
 48284 *Nothosaurus* sp. - fragment of a vertebral centrum, Aupa Valley.

Reptilia, Diapsida, Archosauromorpha

- 46622 ?Archosauromorpha - nearly complete, long limb bone, site 6.
 46628 ?Archosauromorpha - ?vertebral fragment, site 6. To be prepared.
 46560 Archosauromorpha - proximal caudal vertebra, site 7. To be prepared.

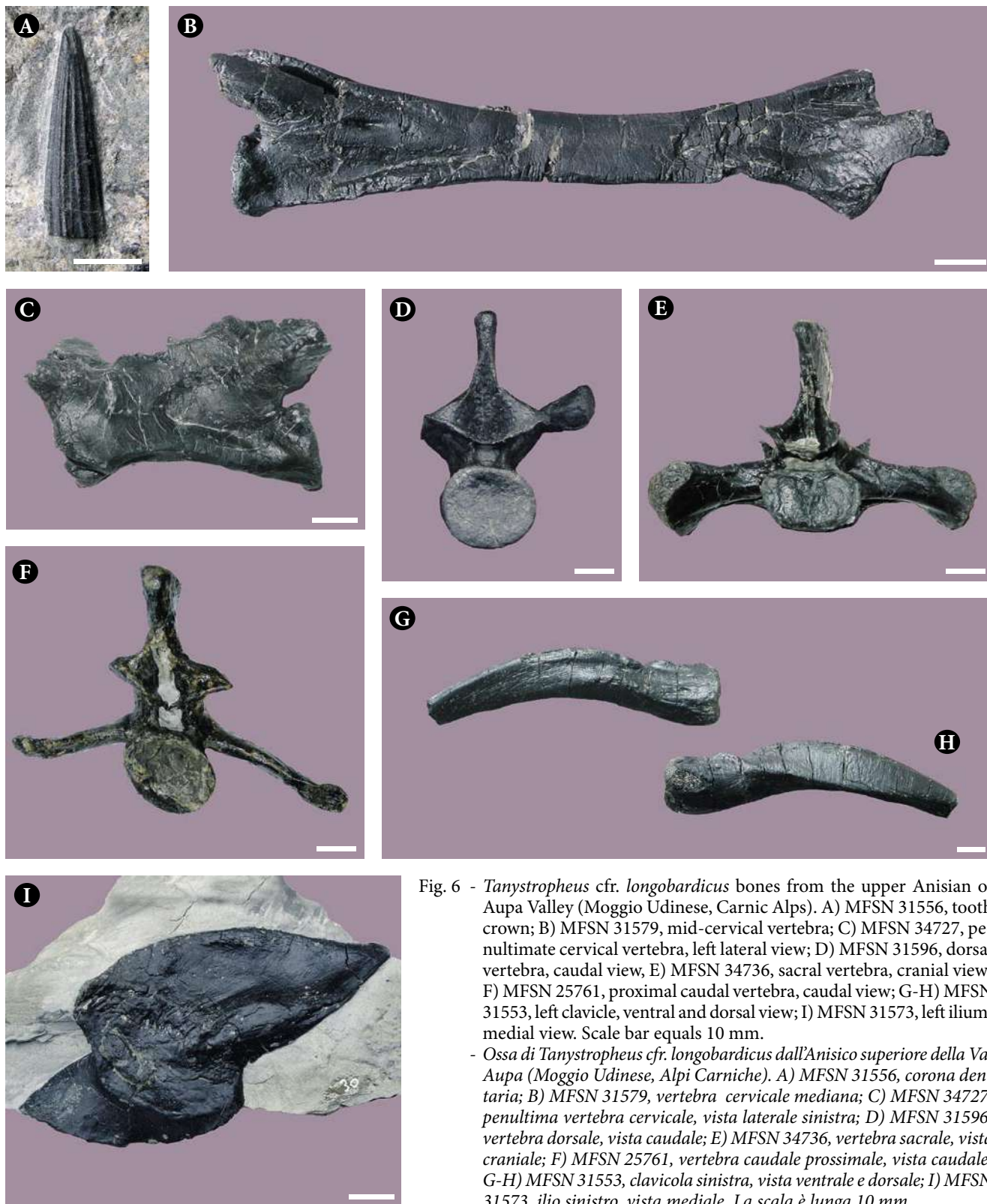


Fig. 6 - *Tanystropheus* cfr. *longobardicus* bones from the upper Anisian of Aupa Valley (Moggio Udinese, Carnic Alps). A) MFSN 31556, tooth crown; B) MFSN 31579, mid-cervical vertebra; C) MFSN 34727, penultimate cervical vertebra, left lateral view; D) MFSN 31596, dorsal vertebra, caudal view; E) MFSN 34736, sacral vertebra, cranial view; F) MFSN 25761, proximal caudal vertebra, caudal view; G-H) MFSN 31553, left clavicle, ventral and dorsal view; I) MFSN 31573, left ilium, medial view. Scale bar equals 10 mm.

- *Ossa di Tanystropheus cfr. longobardicus dall'Anisico superiore della Val Aupa (Moggio Udinese, Alpi Carniche)*. A) MFSN 31556, corona dentaria; B) MFSN 31579, vertebra cervicale mediana; C) MFSN 34727, penultima vertebra cervicale, vista laterale sinistra; D) MFSN 31596, vertebra dorsale, vista caudale; E) MFSN 34736, vertebra sacrale, vista craniale; F) MFSN 25761, vertebra caudale prossimale, vista caudale; G-H) MFSN 31553, clavicola sinistra, vista ventrale e dorsale; I) MFSN 31573, ilio sinistro, vista mediale. La scala è lunga 10 mm.

- 46629 Archosauromorpha - vertebral centrum and base of the neural arch, site 7.
- 46634 Archosauromorpha - presacral vertebra without neural spine, site 5.
- 46687 Archosauromorpha - right quadrate, site 10. To be prepared.
- 46760 Archosauromorpha - large quadrate, site 6. To be prepared.
- Reptilia, Diapsida, Archosauromorpha, Tanystropheidae, Tanystropheus*
- 27270 ?*Tanystropheus* - vertebral fragment conglobated in the rock, Torrent Aupa bed near Saps. To be prepared.
- 27272 ?*Tanystropheus* - vertebral fragment, Torrent Aupa bed near Saps.
- 27278 ?*Tanystropheus* - bone fragment, Torrent Aupa bed.
- 27280 ?*Tanystropheus* - vertebral fragment, Torrent Aupa bed.
- 27282 ?*Tanystropheus* - long bone fragment (possibly a cervical centrum), Torrent Aupa bed.
- 34995/2 ?*Tanystropheus* - ischium, site 6.
- 37579 ?*Tanystropheus* - ?femur shaft, site 6.
- 37583 ?*Tanystropheus* - proximal portion of a ?right femur, site 6.
- 37584 ?*Tanystropheus* - distal portion of a femur, site 6.
- 43900 ?*Tanystropheus* - centrum and base of a neural arch of a dorsal or caudal vertebra, no site reported. To be reassembled and prepared.
- 43901 ?*Tanystropheus* - dorsal or caudal vertebra, no site reported. To be reassembled and prepared.
- 46568 ?*Tanystropheus* - fragment of ?dorsal vertebra, site 6.
- 46569 ?*Tanystropheus* - ?sacral vertebra, site 6.
- 46591 ?*Tanystropheus* - sacral vertebra, site 5.
- 46592 ?*Tanystropheus* - dorsal vertebra, site 6.
- 46593 ?*Tanystropheus* - left ilium, site 9.
- 46594 ?*Tanystropheus* - left ilium, site 9.
- 46595 ?*Tanystropheus* - fragment of a right ilium, site 6.
- 46596 ?*Tanystropheus* - fragment of an ilium, site 7.
- 46597 ?*Tanystropheus* - left ilium, site 5.
- 46598 ?*Tanystropheus* - right ilium, site 7.
- 46599 ?*Tanystropheus* - right ischium, site 9.
- 46606 ?*Tanystropheus* - fragment of an ischium, site 6.
- 46620 ?*Tanystropheus* - humerus, site 6.
- 46621 ?*Tanystropheus* - proximal two-thirds of a femur, site 6.
- 46651 ?*Tanystropheus* - neural spine fragment, rib shaft fragment and ?skull fragment, site 7. To be prepared.
- 46663 ?*Tanystropheus* - femur, site 5.
- 46664 ?*Tanystropheus* - femur, site 5.
- 46673 ?*Tanystropheus* - proximal portion of a large femur, site 6.
- 25761 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra (Fig. 6F), site 6. Described, determined and figured in DALLA VECCHIA (2000b), figured in DALLA VECCHIA (2008b).
- 25762 *Tanystropheus* cfr. *longobardicus* - shaft fragment of a dorsal rib, site 6.
- 25764 *Tanystropheus* cfr. *longobardicus* - bone fragment, site 6. Mentioned in DALLA VECCHIA (2000b).
- 25765 *Tanystropheus* cfr. *longobardicus* - bone fragment, site 6. Mentioned in DALLA VECCHIA (2000b).
- 25766 *Tanystropheus* cfr. *longobardicus* - bone fragment, site 6. Mentioned in DALLA VECCHIA (2000b).
- 27269 *Tanystropheus* cfr. *longobardicus* - fragmented cervical vertebra, Torrent Aupa bed near Saps.
- 27271 *Tanystropheus* cfr. *longobardicus* - four vertebral fragments (possibly not from a same vertebra), Torrent Aupa bed near Saps. To be prepared.
- 27273 *Tanystropheus* cfr. *longobardicus* - incomplete dorsal vertebra, Torrent Aupa bed near Saps. To be prepared.
- 27274 *Tanystropheus* cfr. *longobardicus* - incomplete dorsal vertebra, Torrent Aupa bed near Saps.
- 27275 *Tanystropheus* cfr. *longobardicus* - incomplete proximal caudal vertebra, Torrent Aupa bed near Saps.
- 27276 *Tanystropheus* cfr. *longobardicus* - incomplete proximal caudal vertebra, Torrent Aupa bed near Saps.
- 27277 *Tanystropheus* cfr. *longobardicus* - neural spine, Torrent Aupa bed near Saps.
- 27281 *Tanystropheus* cfr. *longobardicus* - extremity of a cervical vertebra, Torrent Aupa bed near Saps.
- 27521 *Tanystropheus* cfr. *longobardicus* - posterior portion of a cervical vertebra, Torrent Aupa bed near Saps.
- 31544 *Tanystropheus* cfr. *longobardicus* - cervical vertebra, partly sectioned sagittally, site 2.
- 31545 *Tanystropheus* cfr. *longobardicus* - posterior end of a cervical vertebra, site 1.
- 31546 *Tanystropheus* cfr. *longobardicus* - cervical vertebra with damaged extremities, site 1.
- 31547 *Tanystropheus* cfr. *longobardicus* - partial cervical vertebra in two segments (posterior portion well-preserved, the rest very poorly preserved), site 5.
- 31548 *Tanystropheus* cfr. *longobardicus* - fragment of a ?cervical vertebral centrum, Torrent Aupa bed near Saps.
- 31549 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 31550 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 31551 *Tanystropheus* cfr. *longobardicus* - ?dorsal neural arch, site 6.
- 31552 *Tanystropheus* cfr. *longobardicus* - sacral vertebra, site 6.
- 31553 *Tanystropheus* cfr. *longobardicus* - left clavicola (Fig. 6G-H). Described, determined and figured in DALLA VECCHIA (2006c); figured in DALLA VECCHIA (2008b).
- 31554 *Tanystropheus* cfr. *longobardicus* - tooth crown. Described, determined and figured in DALLA VECCHIA (2006); figured in DALLA VECCHIA (2008b).

- 31556 *Tanystropheus* cfr. *longobardicus* - tooth crown (Fig. 6A). Described, determined and figured in DALLA VECCHIA (2006); figured in DALLA VECCHIA (2008b).
- 31557 *Tanystropheus* cfr. *longobardicus* - tooth crown fragment, site 6.
- 31560 *Tanystropheus* cfr. *longobardicus* - distal dorsal rib, site 6. Described, determined and figured in DALLA VECCHIA (2006); figured in DALLA VECCHIA (2008b).
- 31561 *Tanystropheus* cfr. *longobardicus* - distal dorsal rib.
- 31573 *Tanystropheus* cfr. *longobardicus* - right ilium (Fig. 6I), site 6. Described, determined and figured in DALLA VECCHIA (2006c); figured in DALLA VECCHIA (2008b).
- 31574 *Tanystropheus* cfr. *longobardicus* - distal caudal vertebra, site 6. Described, determined and figured in DALLA VECCHIA (2006c); figured in DALLA VECCHIA (2008b).
- 31575 *Tanystropheus* cfr. *longobardicus* - distal caudal vertebra, site 6.
- 31576 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 6.
- 31579 *Tanystropheus* cfr. *longobardicus* - cervical vertebra (Fig. 6B), site 6. Described, determined and figured in DALLA VECCHIA (2006); figured in DALLA VECCHIA (2008b).
- 31580 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 6.
- 31581 *Tanystropheus* cfr. *longobardicus* - mid-distal dorsal vertebra, site 6.
- 31596 *Tanystropheus* cfr. *longobardicus* - dorsal vertebra (Fig. 6D), site 6. Described, determined and figured in DALLA VECCHIA (2006c); figured in DALLA VECCHIA (2008b).
- 31868 *Tanystropheus* cfr. *longobardicus* - pubis, site 6. Determined and figured in DALLA VECCHIA (2008b).
- 34722 *Tanystropheus* cfr. *longobardicus* - astragalus, site 6.
- 34723 *Tanystropheus* cfr. *longobardicus* - fragmentary astragalus, site 6.
- 34724 *Tanystropheus* cfr. *longobardicus* - distal caudal vertebra, site 6.
- 34725 *Tanystropheus* cfr. *longobardicus* - proximal dorsal vertebra, site 6.
- 34726 *Tanystropheus* cfr. *longobardicus* - cervical vertebra, site 6.
- 34727 *Tanystropheus* cfr. *longobardicus* - cervical vertebra 12 (Fig. 6C), site 6. Described, determined and figured in DALLA VECCHIA (2006c); figured in DALLA VECCHIA (2008b).
- 34728 *Tanystropheus* cfr. *longobardicus* - distal caudal vertebra, site 6.
- 34729 *Tanystropheus* cfr. *longobardicus* - distal caudal vertebra, site 6.
- 34730 *Tanystropheus* cfr. *longobardicus* - cervical vertebra, site 6.
- 34731 *Tanystropheus* cfr. *longobardicus* - cervical vertebra, site 6.
- 34732 *Tanystropheus* cfr. *longobardicus* - last cervical vertebra, site 6.
- 34733 *Tanystropheus* cfr. *longobardicus* - proximal dorsal vertebra, site 6.
- 34734 *Tanystropheus* cfr. *longobardicus* - sacral vertebra, site 6.
- 34735 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 34736 *Tanystropheus* cfr. *longobardicus* - Sacral vertebra (Fig. 6E), site 6. Described, determined and figured in DALLA VECCHIA (2006c); figured in DALLA VECCHIA (2008b).
- 34737 *Tanystropheus* cfr. *longobardicus* - two articulated sacral vertebrae, site 6.
- 34738 *Tanystropheus* cfr. *longobardicus* - cervical vertebra, site 6.
- 34739 *Tanystropheus* cfr. *longobardicus* - left ilium and proximal part of cervical rib, site 6.
- 34742 *Tanystropheus* cfr. *longobardicus* - astragalus, site 6. Determined and figured in DALLA VECCHIA (2008b).
- 37571/2 *Tanystropheus* cfr. *longobardicus* - fragment of the ?centrum of a cervical vertebra, site 6.
- 37581 *Tanystropheus* cfr. *longobardicus* - articular head of a cervical rib, site 6.
- 37588 *Tanystropheus* cfr. *longobardicus* - distal dorsal vertebra without part of the neural arch, site 6.
- 37592/2 *Tanystropheus* cfr. *longobardicus* - incomplete proximal caudal vertebra and cervical rib, site 7.
- 44316 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 44317 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 44318 *Tanystropheus* cfr. *longobardicus* - large cervical vertebra, site 10.
- 44319 *Tanystropheus* cfr. *longobardicus* - large cervical vertebra, site 9.
- 44320 *Tanystropheus* cfr. *longobardicus* - large cervical vertebra, site 6.
- 44321 *Tanystropheus* cfr. *longobardicus* - cervical vertebra, site 6.
- 44322 *Tanystropheus* cfr. *longobardicus* - cervical vertebra, site 6.
- 44324/1 *Tanystropheus* cfr. *longobardicus* - distal cervical vertebra, site 7.
- 46486 *Tanystropheus* cfr. *longobardicus* - cervical vertebra, site 9.
- 46487 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 9.
- 46488 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 9.
- 46489 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 9.
- 46490 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 9.
- 46491 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 5.

- 46492 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 5.
- 46493 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 5.
- 46494 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 5.
- 46495 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 5.
- 46496 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 7.
- 46497 *Tanystropheus* cfr. *longobardicus* - cervical vertebra 12, site 7.
- 46498 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 6.
- 46499 *Tanystropheus* cfr. *longobardicus* - cervical vertebra, site 6.
- 46500 *Tanystropheus* cfr. *longobardicus* - ?cervical vertebra fragment, site 6.
- 46501 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 6.
- 46502 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 6.
- 46503 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 6.
- 46504 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 6.
- 46505 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 6.
- 46506 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 6.
- 46507 *Tanystropheus* cfr. *longobardicus* - cervical vertebra 12 and fragmentary ?ceratobranchial, site 6.
- 46508 *Tanystropheus* cfr. *longobardicus* - cervical vertebra 12, site 6.
- 46509 *Tanystropheus* cfr. *longobardicus* - sacral vertebra, site 6.
- 46510 *Tanystropheus* cfr. *longobardicus* - sacral vertebra fragment, site 6.
- 46511 *Tanystropheus* cfr. *longobardicus* - proximal dorsal vertebra, site 6.
- 46512 *Tanystropheus* cfr. *longobardicus* - ?proximal dorsal vertebra, site 6.
- 46513 *Tanystropheus* cfr. *longobardicus* - cervical vertebra ?12, site 6.
- 46514 *Tanystropheus* cfr. *longobardicus* - proximal dorsal vertebra, site 6.
- 46515 *Tanystropheus* cfr. *longobardicus* - proximal dorsal vertebra, site 7.
- 46516 *Tanystropheus* cfr. *longobardicus* - proximal dorsal vertebra, site 7.
- 46517 *Tanystropheus* cfr. *longobardicus* - ?proximal caudal vertebra, site 7.
- 46518 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 5.
- 46519 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 5.
- 46520 *Tanystropheus* cfr. *longobardicus* - incomplete proximal caudal vertebra, site 5.
- 46521 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 5.
- 46522 *Tanystropheus* cfr. *longobardicus* - mid-distal caudal vertebra, site 5.
- 46523 *Tanystropheus* cfr. *longobardicus* - mid-distal caudal vertebra, site 5.
- 46524 *Tanystropheus* cfr. *longobardicus* - partial cervical rib, site 5.
- 46525 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 46526 *Tanystropheus* cfr. *longobardicus* - ?'lumbar' vertebra, site 7.
- 46527 *Tanystropheus* cfr. *longobardicus* - ?'lumbar' vertebra, site 7.
- 46528 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 7.
- 46529 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 7.
- 46530 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 7.
- 46531 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 7.
- 46532 *Tanystropheus* cfr. *longobardicus* - ?proximal caudal vertebra, site 7.
- 46533 *Tanystropheus* cfr. *longobardicus* - one of the last proximal caudal vertebrae, site 7.
- 46534 *Tanystropheus* cfr. *longobardicus* - ?proximal caudal vertebra, site 7.
- 46535 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 7.
- 46536 *Tanystropheus* cfr. *longobardicus* - fragment of a proximal caudal vertebra, site 7.
- 46537 *Tanystropheus* cfr. *longobardicus* - ?proximal caudal vertebra, site 6.
- 46538 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 46539 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 46540 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 46541 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 46542 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 46543 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 46544 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 46545 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 10.
- 46546 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 10.
- 46547 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 10.

- 46548 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 10.
- 46549 *Tanystropheus* cfr. *longobardicus* - misshapen proximal caudal vertebra, site 10.
- 46550 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 46551 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 46552 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, possibly pathologic, site 6.
- 46553 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 46554 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 6.
- 46555 *Tanystropheus* cfr. *longobardicus* - ?proximal caudal vertebra, site 6.
- 46556 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 7.
- 46557 *Tanystropheus* cfr. *longobardicus* - ?dorsal vertebra, site 7.
- 46558 *Tanystropheus* cfr. *longobardicus* - two proximal caudal vertebrae and a ?sacral vertebra, site 7.
- 46559 *Tanystropheus* cfr. *longobardicus* - ?'lumbar' vertebra, site 7.
- 46561 *Tanystropheus* cfr. *longobardicus* - small proximal caudal vertebra, site 7.
- 46562 *Tanystropheus* cfr. *longobardicus* - ?proximal caudal vertebra, site 7.
- 46564 *Tanystropheus* cfr. *longobardicus* - mid-distal dorsal vertebra, site 6.
- 46565 *Tanystropheus* cfr. *longobardicus* - mid-distal dorsal vertebra, site 6.
- 46566 *Tanystropheus* cfr. *longobardicus* - mid-distal dorsal vertebra, site 6.
- 46567 *Tanystropheus* cfr. *longobardicus* - mid-distal dorsal vertebra, site 6.
- 46570 *Tanystropheus* cfr. *longobardicus* - neural spine of a ?dorsal vertebra, site 6.
- 46571 *Tanystropheus* cfr. *longobardicus* - mid-caudal vertebra, site 5.
- 46572 *Tanystropheus* cfr. *longobardicus* - proximal caudal vertebra, site 9.
- 46573 *Tanystropheus* cfr. *longobardicus* - dorsal vertebra, site 9.
- 46574 *Tanystropheus* cfr. *longobardicus* - cervical vertebra ?13, site 5.
- 46575 *Tanystropheus* cfr. *longobardicus* - ?dorsal vertebra, site 6.
- 46576 *Tanystropheus* cfr. *longobardicus* - ?dorsal vertebra without neural spine, site 6.
- 46577 *Tanystropheus* cfr. *longobardicus* - ?dorsal vertebra without neural spine and transverse processes, site 6.
- 46578 *Tanystropheus* cfr. *longobardicus* - incomplete proximal caudal vertebra, site 6.
- 46579 *Tanystropheus* cfr. *longobardicus* - dorsal vertebra, site 6.
- 46580 *Tanystropheus* cfr. *longobardicus* - dorsal vertebra, site 6.
- 46581 *Tanystropheus* cfr. *longobardicus* - mid-caudal vertebra, site 6.
- 46583 *Tanystropheus* cfr. *longobardicus* - neural spine, site 6.
- 46585 *Tanystropheus* cfr. *longobardicus* - fragment of a dicephalous rib, site 6.
- 46586 *Tanystropheus* cfr. *longobardicus* - dicephalous rib, site 10.
- 46587 *Tanystropheus* cfr. *longobardicus* - dicephalous rib, site 9.
- 46588 *Tanystropheus* cfr. *longobardicus* - cervical rib, site 9.
- 46589 *Tanystropheus* cfr. *longobardicus* - dicephalous dorsal rib, site 7.
- 46590 *Tanystropheus* cfr. *longobardicus* - dicephalous dorsal rib, site 7.
- 46600 *Tanystropheus* cfr. *longobardicus* - left ?ischium, site 9.
- 46601 *Tanystropheus* cfr. *longobardicus* - right ischium, site 7.
- 46602 *Tanystropheus* cfr. *longobardicus* - fragment of a right ischium, site 7.
- 46603 *Tanystropheus* cfr. *longobardicus* - right ischium, site 7.
- 46604 *Tanystropheus* cfr. *longobardicus* - fragment of an ischium, site 7.
- 46605 *Tanystropheus* cfr. *longobardicus* - fragment of an ischium, site 6.
- 46607 *Tanystropheus* cfr. *longobardicus* - fragment of a left ischium, site 10.
- 46671 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 5.
- 46694 *Tanystropheus* cfr. *longobardicus* - humerus, site 7.
- 46710 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 6.
- 46725 *Tanystropheus* cfr. *longobardicus* - cervical vertebra fragment, site 6.
- 46772 *Tanystropheus* cfr. *longobardicus* - right humerus, site 9.
- 46773 *Tanystropheus* cfr. *longobardicus* - left humerus, site 9.
- 46792 *Tanystropheus* cfr. *longobardicus* - fragment of a cervical centrum, site 6.
- 46793 *Tanystropheus* cfr. *longobardicus* - tooth crown, site 10.
- 46795 *Tanystropheus* cfr. *longobardicus* - tooth crown, site 9.
- 46798 *Tanystropheus* cfr. *longobardicus* - tooth crown fragment, site 10.
- 46799 *Tanystropheus* cfr. *longobardicus* - tooth crown fragment, site 10.
- 46800 *Tanystropheus* cfr. *longobardicus* - damaged tooth crown, site 10.

- 46801 *Tanystropheus* cfr. *longobardicus* - damaged tooth crown, site 10.
- 46802 *Tanystropheus* cfr. *longobardicus* - tooth crown, site 6.
- 46803 *Tanystropheus* cfr. *longobardicus* - tooth crown, site 10.
- 46804 *Tanystropheus* cfr. *longobardicus* - tooth crown, site 10.
- 46805 *Tanystropheus* cfr. *longobardicus* - tooth crown, site 6.
- 46807 *Tanystropheus* cfr. *longobardicus* - tooth, site 6.
- 46808 *Tanystropheus* cfr. *longobardicus* - tooth, site 6.
- 46809 *Tanystropheus* cfr. *longobardicus* - tooth crown, site 10.
- 46810 *Tanystropheus* cfr. *longobardicus* - small tooth crown, site 7.
- 46811 *Tanystropheus* cfr. *longobardicus* - tooth crown fragment, site 6.
- 46812 *Tanystropheus* cfr. *longobardicus* - tooth crown, site 6.
- 46813 *Tanystropheus* cfr. *longobardicus* - tooth crown fragment, site 10.
- 46814 *Tanystropheus* cfr. *longobardicus* - fragmentary tooth, site 6.
- 46815 *Tanystropheus* cfr. *longobardicus* - tooth crown, site 7.
- 46816 *Tanystropheus* cfr. *longobardicus* - tooth crown, site 10. To be prepared.
- 48275 *Tanystropheus* cfr. *longobardicus* - incomplete cervical vertebra, site 6.
- 48276 *Tanystropheus* cfr. *longobardicus* - posterior portion of a large cervical vertebra, site 6.
- 48278 *Tanystropheus* cfr. *longobardicus* - fragment of a cervical centrum, Aupa Valley.
- 48281 *Tanystropheus* cfr. *longobardicus* - nearly complete caudal vertebra, Aupa Valley.
- 48283 *Tanystropheus* cfr. *longobardicus* - distal portion of a cervical vertebra, Aupa Valley.
- 48280 *Tanystropheus* cfr. *longobardicus* - fragment of a cervical vertebra, Aupa Valley.
- Reptilia, Diapsida, Archosauromorpha, Archosauriformes*
- 37580 ?Archosauriformes - ?osteoderm, site 6.
- 37586 ?Archosauriformes - proximal caudal vertebra, site 6. To be prepared.
- 46563 ?Archosauriformes - vertebral centrum with pedicels of the neural arch, site 7.
- 46582 ?Archosauriformes - vertebral centrum, site 6.
- 46584 ?Archosauriformes - vertebral centrum with the pedicels of the neural arch, site 6.
- 46640 ?Archosauriformes - nearly complete vertebra, site 7.
- 46662 ?Archosauriformes - humerus, site 5.
- 46755/2?Archosauriformes - proximal part of a large ?scapula, site 6.
- 31567 Archosauriformes indet. - right calcaneum, site 6. Described, determined and figured in DALLA VECCHIA (2006c); figured in DALLA VECCHIA (2008b).
- 31577 Archosauriformes indet. - paramedian osteoderm, site 6. Figured in DALLA VECCHIA (2008b).
- 31869 Archosauriformes indet. - caudal vertebra, site 6.
- 34990 Archosauriformes indet. - ischium, site 6. Figured in DALLA VECCHIA (2008b).
- 34991 Archosauriformes indet. - paramedian osteoderm, site 6. Figured in DALLA VECCHIA (2008b).
- 34992 Archosauriformes indet. - dorsal vertebra, site 6.
- 34993 Archosauriformes indet. - fragmentary dorsal rib, site 6.
- 37562 Archosauriformes indet. - dorsal vertebra, site 6.
- 37563 Archosauriformes indet. - ?cervical vertebra, site 6.
- 37564 Archosauriformes indet. - ?proximal caudal vertebra, site 6. To be prepared.
- 37565 Archosauriformes indet. - distal dorsal vertebra, site 7. To be prepared.
- 37566 Archosauriformes indet. - proximal caudal vertebra, site 6.
- 37567 Archosauriformes indet. - proximal caudal vertebra without neural spine, site 6.
- 37568 Archosauriformes indet. - dorsal vertebra, site 7. To be prepared.
- 37569 Archosauriformes indet. - proximal caudal vertebra, site 6.
- 37570 Archosauriformes indet. - osteoderm, site 6.
- 37571/1 Archosauriformes indet. - distal dorsal vertebra, site 6. To be prepared.
- 37572 Archosauriformes indet. - vertebra, site 6.
- 37573 Archosauriformes indet. - dorsal vertebra with fused ribs, site 6.
- 37574 Archosauriformes indet. - right calcaneum, site 6.
- 37575 Archosauriformes indet. - left scapula, site 6.
- 37576 Archosauriformes indet. - proximal portion of a dicephalous rib, site 6.
- 37582 Archosauriformes indet. - proximal caudal vertebra, site 6.
- 37585 Archosauriformes indet. - dorsal vertebra without neural spine, site 6. To be prepared.
- 37587 Archosauriformes indet. - proximal caudal vertebra without neural spine, site 6.
- 37589 Archosauriformes indet. - proximal caudal vertebra, site 6.
- 46485 Archosauriformes indet. - associate osteoderms, site 9.
- 46613 Archosauriformes indet. - centrum of a proximal dorsal vertebra, site 9.
- 46614 Archosauriformes indet. - osteoderm, site 9.
- 46615 Archosauriformes indet. - osteoderm, site 9.
- 46616 Archosauriformes indet. - osteoderm, site 5.
- 46617 Archosauriformes indet. - osteoderm, site 5.
- 46618 Archosauriformes indet. - tooth crown, site 5.

46679 Archosauriformes indet. - osteoderm, site 10.
 46796 Archosauriformes indet. - tooth crown, site 10.
 46806 Archosauriformes indet. - tooth crown, site 10.
 31567, 31577, 31869, 34990, 34991, 34992 and 34993 have been provisionally referred to 'Rausuchia' in DALLA VECCHIA (2006c, 2008b), but they are prudently referred here to indeterminate Archosauriformes, pending their in progress study by F.M. Dalla Vecchia.

1.9 TREPPO CARNICO, PEAK OF MOUNT TERSADIA

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Nothosauria, Nothosauridae, Nothosaurus

15329 *Nothosaurus* sp. - partial mandibular ramus, Bivera Formation, lower Illyrian. Described, determined and figured in RIEPPEL & DALLA VECCHIA (2001); figured in DALLA VECCHIA (2008b).

2. Middle Triassic - Anisian or Ladinian

2.1 PONTEBBA, UCCELLI'S BROOK

Specimens are preserved in pebbles collected in the brook bed. Therefore, they are all from indeterminate lithostratigraphic units, which, however, could be identified by comparison of the lithology with the description of the units cropping out along the brook valley.

Reptilia, Diapsida, Sauropterygia, Placodontia

26824 *Placodontia* indet. - Small neural arch.

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Nothosauria

48742 ?*Nothosauria* - neural arch in transversal cross-section, in a pebble.

48743 ?*Nothosauria* - parts of a neural arch, two vertebral centra and two ribs, in a pebble.

2.2 MOGGIO UDINESE, AUPA VALLEY, DEL FUS BROOK

Reptilia, Diapsida, Sauropterygia, Placodontia, Cyamodontidae, Cyamodus

16848 ?*Cyamodus* - left palatine with teeth, ?'torbiditi d'Aupa' (upper Anisian) or 'terrigeno ladinico' (Ladinian). Mentioned in SIRNA et al. (1994); described, determined and figured in DALLA VECCHIA (1994) and RIEPPEL & DALLA VECCHIA (2001); figured in DALLA VECCHIA (2008b).

3. Middle Triassic - Ladinian

3.1 FORNI DI SOTTO, CLAP DI VAL LOCALITY

Fossils are from the nodular pelagic limestones rich in ammonoids of the Calcarei del Clapsavon Formation, which are late Ladinian (Longobardian) in age.

Reptilia

6129 *Reptilia* indet. - bone fragment.

32438 *Reptilia* indet. - bone fragment (?rib).

33655 *Reptilia* indet. - bone fragment.

Reptilia, Diapsida, Ichthyopterygia, Ichthyosauria, Shastasauridae, Cymbospondylus

15275 ?*Cymbospondylus* - dorsal vertebral centrum (Fig. 3G-H). Mentioned in SIRNA et al. (1994); described and figured in RIEPPEL & DALLA VECCHIA (2001); figured in DALLA VECCHIA (2008b).

20570 ?*Cymbospondylus* - tooth crown fragment. Described, determined and figured in DALLA VECCHIA & AVANZINI (2002).

24993 ?*Cymbospondylus* - tooth crown fragment. Described and determined in DALLA VECCHIA & AVANZINI (2002).

27414 ?*Cymbospondylus* - tooth 'root' and base of the crown. Described, determined and figured in DALLA VECCHIA & AVANZINI (2002); figured in DALLA VECCHIA (2008b).

3.2 FORNI DI SOTTO, FIENILI CHIASTEONS LOCALITY

Reptilia, Diapsida, Ichthyopterygia

27421 ?*Ichthyopterygia* - small tooth. Calcarei del Clapsavon Formation, Ladinian.

3.3 FUSEA (TOLMEZZO), ALONG THE ROAD TO CURIEDI

27415 Archosauriformes indet. - tooth crown, uppermost part of the Dolomia dello Sciliar/Schlern Formation, possibly uppermost Ladinian. Described, determined and figured in DALLA VECCHIA & AVANZINI (2002); figured in DALLA VECCHIA (2008b).

4. Upper Triassic - Carnian

4.1 TOLMEZZO, FUSEA, WEST OF THE VILLAGE CLOSE TO THE ROAD TO CURIEDI

The Fusea site is a small outcrop located west of the village of Fusea (Tolmezzo, Carnic Alps). The fossil-bearing horizon is at the top of the Dolomia dello Sciliar/Schlern Formation (an unit representing a 800-meters-thick carbonate platform sequence) and at the base of the Val Degano Formation (a sequence of black limestone up to 800 meters thick, deposited in a marine basin that was relatively deep in its depocentral area). The vertebrate-bearing section of the Fusea site (layers A-G) was described in detail by DALLA VECCHIA (2000b) and DALLA VECCHIA & CARNEVALE (2011). The section has a latest Ladinian or earliest Carnian age (DALLA VECCHIA & CARNEVALE 2011). Vertebrate remains occur, in order of decreasing frequency, mainly in the layers E, F and D, whereas they

are very rare in layers A, C and G (see DALLA VECCHIA 2008b). Specimens with stratigraphic data are those collected by F.M. Dalla Vecchia; the stratigraphic provenance of the other specimens can be identified by the peculiar lithology of each fossil-bearing layer, but this work has not been fully undertaken yet. Sauropsids are represented by sauropterygians (placodonts and nothosaurs), *Tanystropheus* (a single cervical vertebra) and archosauriforms (represented by small isolated teeth mostly from layers E and F). Probably, all placodont remains belong to the same taxon as the skull MFSN 26830, which was referred to *Cyamodus* sp. in the recent literature. Identification of the unpublished specimens is just tentative, as many of them are still unprepared for study. Several reptile specimens in the MFSN palaeontological collection are still reported in the inventory as “indeterminate bone fragment”, thus they are not mentioned here, pending their reanalysis. Some reptile specimens that have been collected in the last century are still without an inventory number; they are not reported here.

Reptilia

- 27732 ?Reptilia - bone fragment, layer F.
 37417 ?Reptilia - two small bone fragments, upper part of layer E.
 38286 ?Reptilia - bone fragment, layer G.
 38296/1 ?Reptilia - bone fragment, top layer E.
 39679/1 ?Reptilia - tooth crown fragment in cross section, layer F.
 39711 ?Reptilia - small tooth crown, layer E.
 46257 ?Reptilia - tooth crown.
- 15696 Reptilia - bone fragments, layer E.
 18448/1 Reptilia - rib, layer E.
 18451 Reptilia - bone fragment, layer E.
 19175 Reptilia - two bone fragments, layer E.
 19184/1 Reptilia - fragmentary rib, layer E.
 22016 Reptilia - rib fragment, layer F.
 22020/4 Reptilia - two small bone fragments, layer F.
 22021 Reptilia - bone fragment, layer E.
 22023 Reptilia - fragment of a flat bone, layer E.
 22767 Reptilia - bone fragment.
 22772 Reptilia - fragment of a limb or girdle bone, from the debris.
 22867 Reptilia - rib shaft fragment.
 26650 Reptilia - bone fragments (perhaps cyamodontoid osteoderms), layer E. To be prepared.
 26711 Reptilia - vertebral fragment.
 26712 Reptilia - bone fragment.
 26713 Reptilia - bone fragment.
 27744 Reptilia - bone fragment, layer E.
 27745 Reptilia - fragment of a vertebra, layer E.
 27753 Reptilia - fragment of a vertebral centrum.
 28439 Reptilia - several bone fragments, possibly ribs, layer E.
 28455/3 Reptilia - bone fragment, layer F.
- 28464 Reptilia - half epiphysis of a long bone, top layer E.
 28466 Reptilia - fragment of a rib shaft, from the debris.
 28952 Reptilia - vertebral centrum, boundary layers E and F.
 28991 Reptilia - vertebral centrum, boundary layers D and E.
 31604 Reptilia - rib fragment, layer E.
 31606 Reptilia - bone fragment, boundary layers D and E.
 31607 Reptilia - ?rib fragment, layer E.
 33656 Reptilia - bone fragment conglobated in artificial resin and sectioned.
 34403 Reptilia - large, Y-shaped and partially preserved bone, top layer E. To be prepared.
 34406 Reptilia - rib fragment, layer E.
 34407 Reptilia - rib fragment, top layer E.
 34408/1 Reptilia - rib fragment, top layer E.
 34409 Reptilia - bone fragment, layer F.
 34413 Reptilia - bone fragment, top layer E.
 34416 Reptilia - rib fragment, layer F.
 34417 Reptilia - rib fragment, layer E.
 34418 Reptilia - bone fragment, layer E.
 35445/1 Reptilia - bone fragment, top layer E, near the cervical vertebra of *Tanystropheus*. To be prepared.
 35446 Reptilia - rib fragment, layer E.
 35447 Reptilia - bone fragment, layer A.
 35448 Reptilia - small bone fragment, layer A.
 35449 Reptilia - bone fragment, layer A.
 35450 Reptilia - bone fragment, layer A.
 35451 Reptilia - five small bone fragments, layer A. Specimens 35447 to 35451 are from the same outcrop and level as specimens 38303-310.
 35478 Reptilia - bone fragment, layer D.
 35479 Reptilia - nine bone fragments, layer D.
 35484 Reptilia - rib shaft fragment and indeterminate bone, top layer E.
 37418 Reptilia - bone fragment, upper part of layer E.
 37419 Reptilia - bone fragment, upper part of layer E.
 37420 Reptilia - bone fragment, upper part of layer E.
 37429 Reptilia - bone fragment, upper part of layer E.
 37434 Reptilia - bone fragment, layer D.
 37444/1 Reptilia - bone fragment, layer D.
 38299 Reptilia - bone fragment, probably from a vertebral centrum, layer E.
 38303 Reptilia - several bone fragments, layer A. To be prepared.
 38304 Reptilia - some bone fragments, layer A. To be prepared.
 38305 Reptilia - some bone fragments, layer A. To be prepared.
 38306 Reptilia - some bone fragments, layer A.
 38307 Reptilia - some small bone fragments, layer A.
 38308 Reptilia - two bone fragments, layer A.
 38309 Reptilia - single and very small bone fragment, layer A.
 38310 Reptilia - one bone fragment and the possible impression of the crown of a *Nothosaurus* tooth, layer A.

Specimens 38303-310 were collected close to each other in a same outcrop of layer A near the opening of the artificial cave just above the main fossiliferous layers.

- 39662 Reptilia - bone fragment, layer D.
- 39663/1 Reptilia - bone fragment, layer D.
- 39664 Reptilia - bone fragment, layer G.
- 39667 Reptilia - small vertebra and some indeterminate bone fragments, layer F (thick part of layer F, with coal fragments). To be prepared.
- 39675/1 Reptilia - small splinter of bone, layer E.
- 39685 Reptilia - bone fragment, layer E.
- 39696 Reptilia - small bone fragment, layer D.
- 39698 Reptilia - three bone fragments, from the debris.
- 39699 Reptilia - bone fragment, from the debris.
- 39704 Reptilia - bone fragment, layer E. To be prepared.
- 39715 Reptilia - bone fragments, layer E.

Reptilia, Diapsida, Sauropterygia

- 18445 ?Sauropterygia - complete holocephalous rib and proximal end of another holocephalous rib, layer E.
- 26672 ? Sauropterygia - rib fragment.

- 27743 Sauropterygia indet. - fragment of a vertebral centrum, layer F.
- 34405 Sauropterygia indet. - vertebral centrum, layer D. To be prepared.
- 37414 Sauropterygia indet. - neural arch nearly totally conglobated by the rock, upper half of layer E. To be prepared.
- 37416 Sauropterygia indet. - bone fragment probably from a flat girdle bone, upper part of layer E.

Reptilia, Diapsida, Sauropterygia, Placodontia

- 22764 Placodontia indet. - distal half of a limb bone (?femur).
- 33663 Placodontia indet. - large dental plate, top layer E. To be prepared.
- 38503 Placodontia indet. - vertebral centrum, layer E or F.
- 39695 Placodontia indet. - very small tooth plate, layer E.
- 51350 Placodontia indet. - nearly complete rostral tooth crown, from the dissolution of layer F. Determined by C. Duffin; figured in DALLA VECCHIA (2008b).
- 51351 Placodontia indet. - nearly complete rostral tooth crown, from the dissolution of layer F. Determined by C. Duffin; figured in DALLA VECCHIA (2008b).
- 51354 Placodontia indet. - fragment of tooth plate, from the dissolution of layer F. Determined by C. Duffin.
- 51355 Placodontia indet. - fragment of tooth plate, from the dissolution of layer F. Determined by C. Duffin.

Reptilia, Diapsida, Sauropterygia, Placodontia, Cyamodontoidea

- 15695 Cyamodontoidea indet. - osteoderm, layer D.

- 15698 Cyamodontoidea indet. - partial dorsal neural arch (Fig. 7E). Described, determined and figured in RIEPPEL & DALLA VECCHIA (2001); figured in DALLA VECCHIA (2008b).

- 15699/1 Cyamodontoidea indet. - pubis, layer E.

- 15700 Cyamodontoidea indet. - large portion of a dorsal armour (Fig. 7B), layer E. Described, determined and figured in RIEPPEL & DALLA VECCHIA (2001); figured in DALLA VECCHIA (2008b).

- 18449 Cyamodontoidea indet. - impression of a dorsal armour fragment, layer E.

- 18450 Cyamodontoidea indet. - dorsal armour fragments, from the debris.

- 19176 Cyamodontoidea indet. - osteoderm, layer F.

- 19177 Cyamodontoidea indet. - osteoderm, layer E.

- 19178 Cyamodontoidea indet. - dorsal armour fragment, layer E. Determined and reported in RIEPPEL & DALLA VECCHIA (2001).

- 19179 Cyamodontoidea indet. - dorsal armour fragment.

- 21999/4 Cyamodontoidea indet. - armour fragment.

- 22003/3 Cyamodontoidea indet. - armour fragment.

- 22008 Cyamodontoidea indet. - armour fragment.

- 22009/1 Cyamodontoidea indet. - armour fragment.

- 22010 Cyamodontoidea indet. - armour fragment.

- 22759 Cyamodontoidea indet. - nearly complete dorsal armour composed of the impression of the armour with some parts of the bone (Fig. 7C) and the rest of the armour in numerous fragments of very different sizes. It was found in the lower part of layer E. The roots of the grass had penetrated the armour breaking it into a myriad of fragments and humus deposited among them. Humus and dirt were taken away in 1990/91 when the specimen was collected; the armour needs to be reassembled and prepared. Described and partly figured in RIEPPEL & DALLA VECCHIA (2001); partly figured DALLA VECCHIA (2008b).

- 22760 Cyamodontoidea indet. - central portion of a dorsal armour, layer D. Determined and reported in RIEPPEL & DALLA VECCHIA (2001). To be reassembled.

- 22761 Cyamodontoidea indet. - nuchal portion of a dorsal armour (Fig. 7D), layer E. Determined, described and figured in RIEPPEL & DALLA VECCHIA (2001).

- 22762 Cyamodontoidea indet. - fragment of a dorsal armour, layer E. Determined, described and figured in RIEPPEL & DALLA VECCHIA (2001).

- 22763 Cyamodontoidea indet. - fragment of a dorsal armour, layer E. Determined, described and figured in RIEPPEL & DALLA VECCHIA (2001).

- 22765 Cyamodontidae indet. - armour fragment, base layer E.

- 22766 Cyamodontoidea indet. - small armour fragment, layer E.

- 22768 Cyamodontoidea indet. - armour fragment.

- 22769 Cyamodontoidea indet. - armour fragment.

- 22770 Cyamodontoidea indet. - armour fragment.

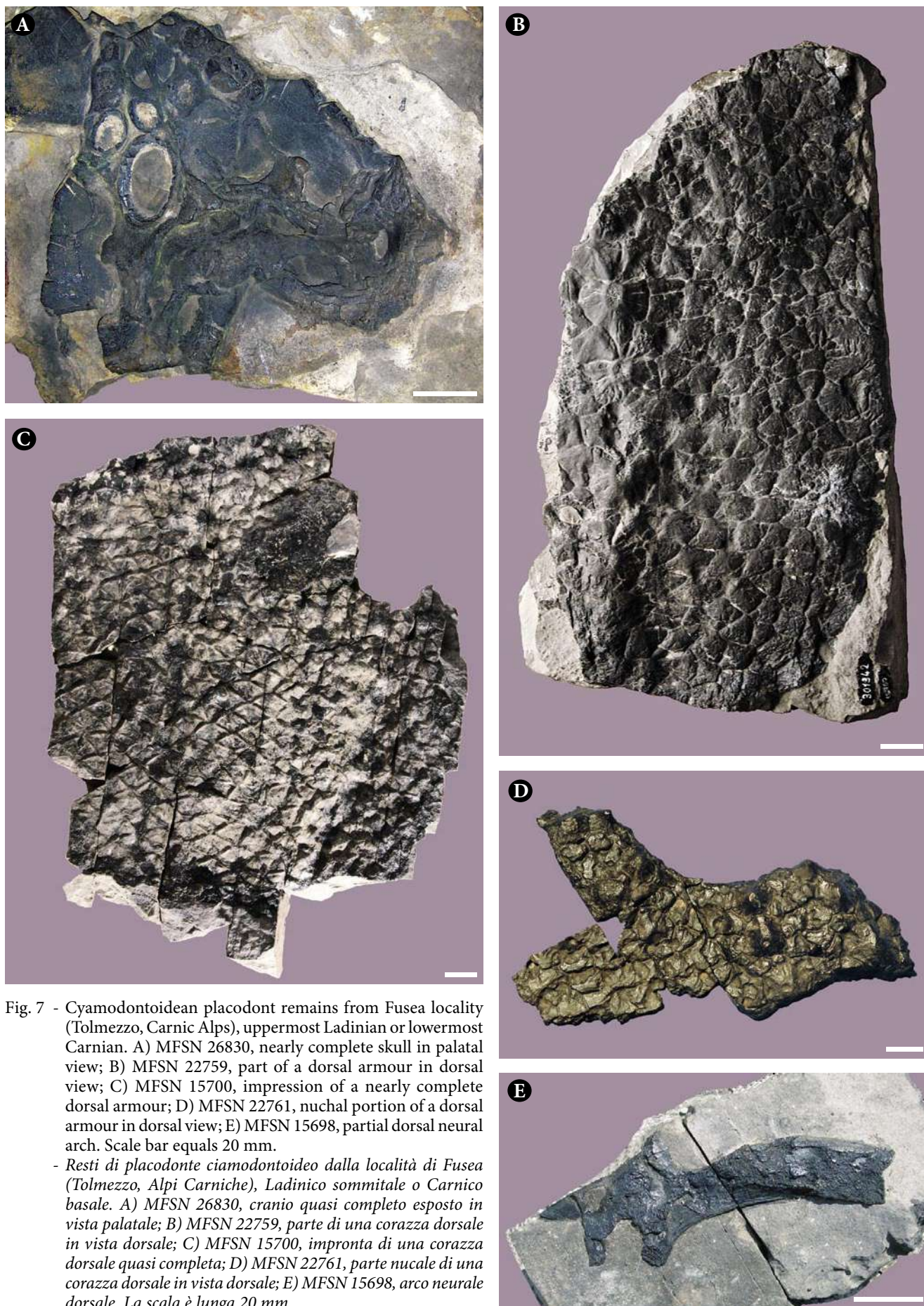


Fig. 7 - Cyamodontoidean placodont remains from Fusea locality (Tolmezzo, Carnic Alps), uppermost Ladinian or lowermost Carnian. A) MFSN 26830, nearly complete skull in palatal view; B) MFSN 22759, part of a dorsal armour in dorsal view; C) MFSN 15700, impression of a nearly complete dorsal armour; D) MFSN 22761, nuchal portion of a dorsal armour in dorsal view; E) MFSN 15698, partial dorsal neural arch. Scale bar equals 20 mm.

- Resti di placodonte ciamodontoideo dalla località di Fusea (Tolmezzo, Alpi Carniche), Ladinico sommitale o Carnico basale. A) MFSN 26830, cranio quasi completo esposto in vista palatale; B) MFSN 22759, parte di una corazza dorsale in vista dorsale; C) MFSN 15700, impronta di una corazza dorsale quasi completa; D) MFSN 22761, parte nucale di una corazza dorsale in vista dorsale; E) MFSN 15698, arco neurale dorsale. La scala è lunga 20 mm.

22771 *Cyamodontoidea* indet. - osteoderm, layer E.
 22773/1 *Cyamodontoidea* indet. - osteoderm, boundary
 layers D and E.
 22774/1 *Cyamodontoidea* indet. - armour fragment.
 22775/1 *Cyamodontoidea* indet. - small armour fragment,
 base layer E.

26655/1 *Cyamodontoidea* indet. - armour fragment, layer
 F.
 26708 *Cyamodontoidea* indet. - armour fragment.
 26714 *Cyamodontoidea* indet. - osteoderm fragment.
 26715 *Cyamodontoidea* indet. - osteoderm fragment.
 26716 *Cyamodontoidea* indet. - osteoderm fragment.

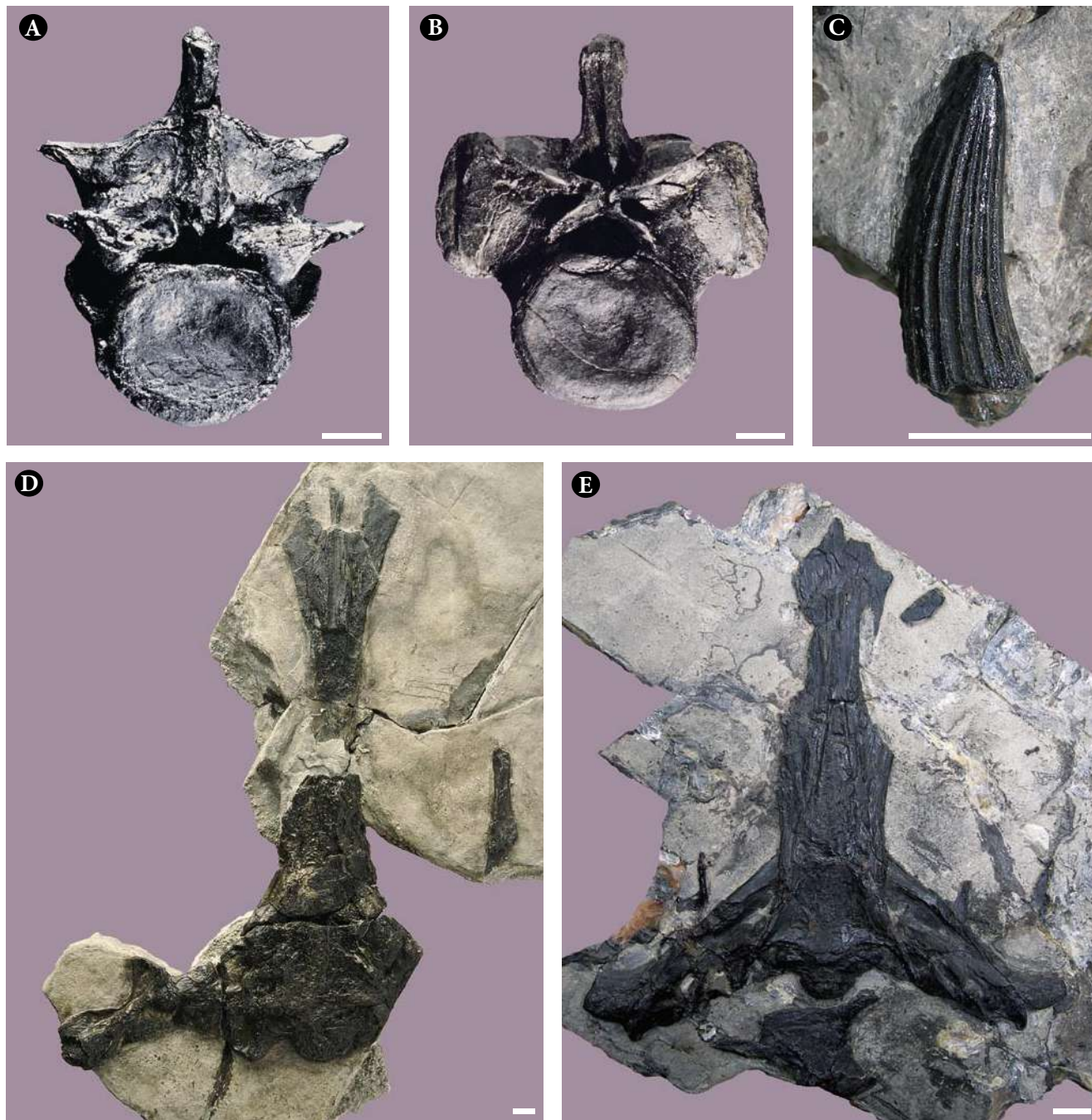


Fig. 8 - *Nothosaurus* cf. *giganteus* (Nothosauria) remains from Fusesa locality (Tolmezzo, Carnic Alps), uppermost Ladinian or lowermost Carnian. A) MFSN 16849, *N. cf. giganteus* 'pectoral' vertebra in cranial view; B) MFSN 16851, *N. cf. giganteus* dorsal vertebra in caudal view; C) MFSN 19183, *N. cf. giganteus* tooth crown; D) MFSN 19288, *N. cf. giganteus* partial skull (palate, quadrate, occiput and basicranium), palatal view; E) MFSN 19866, *Nothosaurus* sp. partial skull (palate, quadrate, occiput and basicranium) palatal view. Scale bar equals 10 mm.

- *Nothosaurus* cf. *giganteus* (Nothosauria) remains dalla località di Fusesa (Tolmezzo, Alpi Carniche), Ladinico sommitale o Carnico basale. A) MFSN 16849, *N. cf. giganteus*, vertebra 'pettorale' in vista craniale; B) MFSN 16851, *N. cf. giganteus* vertebra dorsale in vista caudale; C) MFSN 19183, *N. cf. giganteus*, corona dentaria; D) MFSN 19288, *N. cf. giganteus*, parte di cranio (palato, quadrato, occipite e basicranio) in vista palatale; E) MFSN 19866, *Nothosaurus* sp., parte di cranio (palato, quadrato, occipite e basicranio) in vista palatale. La scala è lunga 10 mm.

- 27356 *Cyamodontoidea* indet. - armour fragment, layer D.
 27357 *Cyamodontoidea* indet. - osteoderm.
 27742 *Cyamodontoidea* indet. - large armour fragment, layer E.
 27756 *Cyamodontoidea* indet. - osteoderm.
 28465 *Cyamodontidae* indet. - small dorsal armour fragment, ?layer F
 28980 *Cyamodontoidea* indet. - armour fragment, layer ?D.
 34429 *Cyamodontoidea* indet. - armour fragment, boundary layers E and F.
 34430 *Cyamodontoidea* indet. - armour fragment, boundary layers E and F.
 34431 *Cyamodontoidea* indet. - armour fragment, boundary layers E and F.
 34432 *Cyamodontoidea* indet. - armour fragment, boundary layers E and F.
 34433 *Cyamodontoidea* indet. - armour fragment, boundary layers E and F.
 35454 *Cyamodontoidea* indet. - osteoderm, layer E.
 35485 *Cyamodontoidea* indet. - small armour fragment, layer E. To be prepared.
 37426 *Cyamodontoidea* indet. - some fragmentary osteoderms, layer A.
 38297 *Cyamodontoidea* indet. - osteoderms fragment, probably layer E.
 39684 *Cyamodontoidea* indet. - armour fragment, layer D.

Reptilia, Diapsida, Sauropterygia, Placodontia, Cyamodontidae, Cyamodus

- 26830 *Cyamodus* sp. - nearly complete, but dorsoventrally compressed, skull exposed in palatal view (Fig. 7A), top layer E. Described and figured in ZUCCHI STOLFA (1975); referred to *Placochelys placodonta* by PINNA & ZUCCHI STOLFA (1979), subsequently referred to *Cyamodus* by RIEPPEL & NOSOTTI (2002). Mentioned in SIRNA et al. (1994); figured in DALLA VECCHIA (2008b).

Reptilia, Diapsida, Sauropterygia, Eusauropterygia

- 15697 *Eusauropterygia* - fragment of an element of the girdles (coracoid or pubis), layer E.
 22020/2 *Eusauropterygia* - fragment of a small ?clavicle, layer F.
 22868 *Eusauropterygia* - head of a ?dorsal rib.
 26679 *Eusauropterygia* indet. - fragment of a vertebral centrum.
 26710 *Eusauropterygia* indet. - vertebral centrum.
 35482 *Eusauropterygia* indet. - vertebral centrum fragment, top layer E.

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Nothosauroida

- 19865 ?*Nothosauroida* - partial mandibular ramus and premaxillae with some teeth. Determined and figured in DALLA VECCHIA (2008b).

- 26709 ?*Nothosauroida* - vertebral centrum.
 35481 ?*Nothosauroida* - impression of a neural arch with fragments of bone, top layer E.

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Nothosauria, Nothosauridae, Nothosaurus

- 22870 ?*Nothosaurus* - tooth crown, layer E. To be prepared.
 33657 ?*Nothosaurus* - vertebral centrum conglobated in resin and sectioned.
 33658 ?*Nothosaurus* - nearly complete flat and thin bone similar to specimen 22916 that was identified as a clavicle of *Nothosaurus* cfr. *giganteus* in RIEPPEL & DALLA VECCHIA (2001, fig. 25), top layer E.
 33661 ?*Nothosaurus* - shaft of a ?coracoid, top layer E.
 33667 ?*Nothosaurus* - fragment of the articular part of a girdle bone.
 39718 ?*Nothosaurus* - incomplete and broken flat and thin bone similar to specimen 22916 that was identified as a clavicle of *Nothosaurus* cfr. *giganteus* in RIEPPEL & DALLA VECCHIA (2001, fig. 25), layer E.
 5876 *Nothosaurus* sp. - partial dorsal rib, layer E.
 18444 *Nothosaurus* sp. - fragment of a vertebral centrum, layer E.
 19866 *Nothosaurus* sp. - partial skull (palate, basicranium, occiput, quadrate, etc) in ventral view (Fig. 8E), top layer E. Described and figured in RIEPPEL & DALLA VECCHIA (2001); figured in DALLA VECCHIA (2008b).
 27730 *Nothosaurus* sp. - tooth crown, boundary layers D and E.
 33659 *Nothosaurus* sp. - dorsal vertebral centrum, layer ?E.
 33660 *Nothosaurus* sp. - fragment of a vertebral centrum, layer E.
 33666 *Nothosaurus* sp. - neural arch of a dorsal vertebra, layer E.
 34404 *Nothosaurus* sp. - proximal part of a pubis or coracoid, top layer E. To be prepared.
 34412 *Nothosaurus* sp. - vertebral centrum mostly conglobated in the rock, top layer layer E. To be prepared.
 46251 *Nothosaurus* sp. - mandibular fragment with remains of a fang-like alveolate tooth, from the debris.
 51333 *Nothosaurus* sp. - tooth crown fragment, from the dissolution of layer F.
 51334 *Nothosaurus* sp. - tooth crown fragment, from the dissolution of layer F. Figured in DALLA VECCHIA (2008b).
 51335 *Nothosaurus* sp. - tooth crown fragment, from the dissolution of layer F.
 51336 *Nothosaurus* sp. - tooth crown, from the dissolution of layer F. Figured in DALLA VECCHIA (2008b).
 51337 *Nothosaurus* sp. - tooth crown fragment, from the dissolution of layer F.
 51338 *Nothosaurus* sp. - tooth crown fragment, from the dissolution of layer F.
 51339 *Nothosaurus* sp. - Tooth crown fragment, from the dissolution of layer F.

51348 *Nothosaurus* sp. - tooth crown fragment, from the dissolution of layer F.

51353 *Nothosaurus* sp. - tooth crown fragment, from the dissolution of layer F.

Most probably all of the *Nothosaurus* material should be referred as *Nothosaurus* cfr. *giganteus*.

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Nothosauria, Nothosauridae, Nothosaurus giganteus

16849 *Nothosaurus* cfr. *giganteus* - distal cervical ('pectoral') vertebra (Fig. 8A), top layer E. Mentioned in SIRNA et al. (1994) as *Paranothosaurus?* sp.; described, determined (as cf. *Paranothosaurus*) and figured in DALLA VECCHIA (1994); described, determined and figured in RIEPPEL & DALLA VECCHIA (2001); figured in DALLA VECCHIA (2008b). Found close to specimen 16850.

16850 *Nothosaurus* cfr. *giganteus* - mid-distal dorsal vertebra, top layer E. Mentioned in SIRNA et al. (1994) as *Paranothosaurus?* sp.; described, determined (as cf. *Paranothosaurus*) and figured in DALLA VECCHIA (1994); described, determined and figured in RIEPPEL & DALLA VECCHIA (2001).

16851 *Nothosaurus* cfr. *giganteus* - mid-distal dorsal vertebra (Fig. 8B), top layer E. Mentioned in SIRNA et al. (1994) as *Paranothosaurus?* sp.; described and determined (as cf. *Paranothosaurus*) in DALLA VECCHIA (1994); described and determined in RIEPPEL & DALLA VECCHIA (2001); figured in DALLA VECCHIA (2008b). Found close to 16850.

17248 *Nothosaurus* cfr. *giganteus* - neural arch of a proximal dorsal vertebra, layer E. Described, determined and figured in RIEPPEL & DALLA VECCHIA (2001).

17249 *Nothosaurus* cfr. *giganteus* - dorsal vertebral centrum, layer E.

19183 *Nothosaurus* cfr. *giganteus* - tooth crown (Fig. 8C), layer E. Described, determined and figured in DALLA VECCHIA & AVANZINI (2002); figured in DALLA VECCHIA (2008b).

19288 *Nothosaurus* cfr. *giganteus* - large partial skull (palate, basicranium, occiput, etc) in ventral view (Fig. 8D), possibly layer E. Described, determined and figured in RIEPPEL & DALLA VECCHIA (2001), figured in DALLA VECCHIA (2008b).

22000 *Nothosaurus* cfr. *giganteus* - mandibular ramus fragment comprising the mandibular articulation, layer F. Described, determined and figured in RIEPPEL & DALLA VECCHIA (2001).

22004 *Nothosaurus* cfr. *giganteus* - mandibular ramus fragment with a replacement tooth, boundary layers E and F. Described, determined and figured in RIEPPEL & DALLA VECCHIA (2001).

22916 *Nothosaurus* cfr. *giganteus* - incomplete left clavicle, layer E. Described, determined and figured in RIEPPEL & DALLA VECCHIA (2001).

22917 *Nothosaurus* cfr. *giganteus* - large fragment of a clavicle (based on the determination of specimen 22916 in RIEPPEL & DALLA VECCHIA 2001), layer E.

33664 *Nothosaurus* cfr. *giganteus* - neural arch and part of the centrum of a dorsal vertebra, layer E.

33665 *Nothosaurus* cfr. *giganteus* - neural arch of a dorsal vertebra, layer E.

37452 *Nothosaurus* cfr. *giganteus* - girdle bone fragment, layer E.

Reptilia, Diapsida, Archosauromorpha, Tanystropheidae, Tanystropheus

25760 *Tanystropheus* sp. - partial cervical vertebra (Fig. 9), layer E. Determined, described and figured in DALLA VECCHIA (2000b); figured in DALLA VECCHIA (2008b).



Fig. 9 - MFSN 25760, cervical vertebra of *Tanystropheus* sp. (Tanystropheidae) from the Fusea locality (Tolmezzo, Carnic Alps), uppermost Ladinian or lowermost Carnian. Scale bar equals 10 mm.
- MFSN 25760, vertebra cervicale di *Tanystropheus* sp. (Tanystropheidae) dalla località di Fusea (Tolmezzo, Alpi Carniche), Ladinico sommitale o Carnico basale. La scala è lunga 10 mm.

Reptilia, Diapsida, Archosauromorpha, Archosauriformes

28993 ?Archosauriformes. - tooth crown, layer E.

31609/2 Archosauriformes indet. - tooth crown, layer F. Determined and figured in DALLA VECCHIA (2008b).

28949 Archosauriformes indet. - tooth crown, base of layer E.

46252 Archosauriformes indet. - tooth crown fragment, from the dissolution of layer F.

46253 Archosauriformes indet. - tooth crown fragment, from the dissolution of layer F.

51319 Archosauriformes indet. - tooth crown, from the dissolution of layer F.

51320 Archosauriformes indet. - tooth crown, from the dissolution of layer F.

51321 Archosauriformes indet. - tooth crown, from the dissolution of layer F.

51340 Archosauriformes indet. - tooth crown fragment, from the dissolution of layer F.

51341 Archosauriformes indet. - tooth crown fragment, from the dissolution of layer F.

51342 Archosauriformes indet. - tooth crown fragment, from the dissolution of layer F.

51343 Archosauriformes indet. - tooth crown fragment, from the dissolution of layer F. Determined and figured in DALLA VECCHIA (2008b).

51344 Archosauriformes indet. - tooth crown, from the dissolution of layer F. Determined and figured in DALLA VECCHIA (2008b).

51345 Archosauriformes indet. - tooth crown fragment, from the dissolution of layer F.

51346 Archosauriformes indet. - tooth crown fragment, from the dissolution of layer F. Determined and figured in DALLA VECCHIA (2008b).

51347 Archosauriformes indet. - tooth crown fragment, from the dissolution of layer F.

51352 Archosauriformes indet. - tooth crown fragment, from the dissolution of layer F.

The study of these teeth is in progress by Fabio M. Dalla Vecchia.

4.2 TOLMEZZO, FUSEA, NEAR THE OLD COAL MINE ALONG THE LUCHIAT BROOK

Specimens are from the coal-bearing basal levels of the Val Degano Formation (basal Carnian) corresponding to the layer G of the close main bone-bearing outcrop of Fusea.

Reptilia, Diapsida, Archosauromorpha, Archosauriformes

34276 Archosauriformes indet. - tooth crown. Determined and figured in DALLA VECCHIA (2008b).

34277 Archosauriformes indet. - tooth crown. Determined and figured in DALLA VECCHIA (2008b).

4.3 LAUCO, NEAR TRAVA VILLAGE

Reptilia, Diapsida, Archosauromorpha, Archosauriformes

33670 Archosauriformes indet. - Partial and disarticulated skeleton of a small archosauriform, which preparation was recently concluded. Val Degano Formation, lower Carnian. It is figured in DALLA VECCHIA (2008b). Its study is in progress by Fabio M. Dalla Vecchia.

4.4 "RAIBL" HISTORICAL LOCALITIES, TARVISIO

With the Austrian name of "Raibl" is known in literature a 'classic' fossil association of Carnian age that has been famous since the 19th century mainly for its ichthyofauna (see DALLA VECCHIA 2008b and literature cited therein). Fossils are from different outcrops of the lower Carnian Calcare del Predil Formation (known also as "scisti ittiolitici di Raibl") in distinct localities around the village of Raibl (named Cave del Predil since the end of the First World War).

4.4.1 CANALE PRASNIG LOCALITY

Reptilia

33431 ?Reptilia indet. - six partially preserved and parallel dorsal ribs.

Reptilia, Diapsida, Archosauromorpha

27532 Archosauromorpha indet. - partial postcranial skeleton. Figured in DALLA VECCHIA (2008b). Its study is in progress by Fabio M. Dalla Vecchia.

4.4.2 KLINKEN BROOK LOCALITY

Reptilia

24642 Reptilia indet. - most of a dorsal rib shaft.

4.4.3 RIOFREDDO LOCALITY

Reptilia

37544 Reptilia indet. - four chevrons and a partial centrum.

Reptilia, Diapsida, Thalattosauria

13228 ?Thalattosauria - fragment of the caudal vertebral column. Mentioned in SIRNA et al. (1994); described, determined and figured in DALLA VECCHIA (1994); figured in DALLA VECCHIA (2008b).

4.5 DOGNA

Several localities in the territory of the small town of Dogna, which is located along the Fella River at the boundary between the Carnic and Julian Alps, yielded reptiles remains (see DALLA VECCHIA 2008b). Specimens with known locality of collection are all from the lower Carnian Rio del Lago Formation (see PRETO et al.

2005) and those of which the precise locality of collection is unknown are also most probably from the Rio del Lago Formation based mainly on the associate lithology.

4.5.1 FROM ONE OR MORE DOGNA LOCALITIES, BUT PRECISE LOCALITY/IES IS/ARE UNKNOWN

Material from a thesis at the University of Milano. Remains are reported as from the Tor Formation (A. Tintori, pers. comm.), but are possibly partly or totally from the Rio dal Lago Formation.

Reptilia indet.

38557 *Reptilia indet.* - rib fragment.

51362 *Reptilia indet.* - proximal portion of a limb bone.

51363 *Reptilia indet.* - bone fragment.

51370 *Reptilia indet.* - tooth crown.

Reptilia, Diapsida, Sauropterygia, Placodontia

51364 *Placodontia indet.* - very small tooth plate.

51359 *Placodontia indet.* - rostral tooth crown.

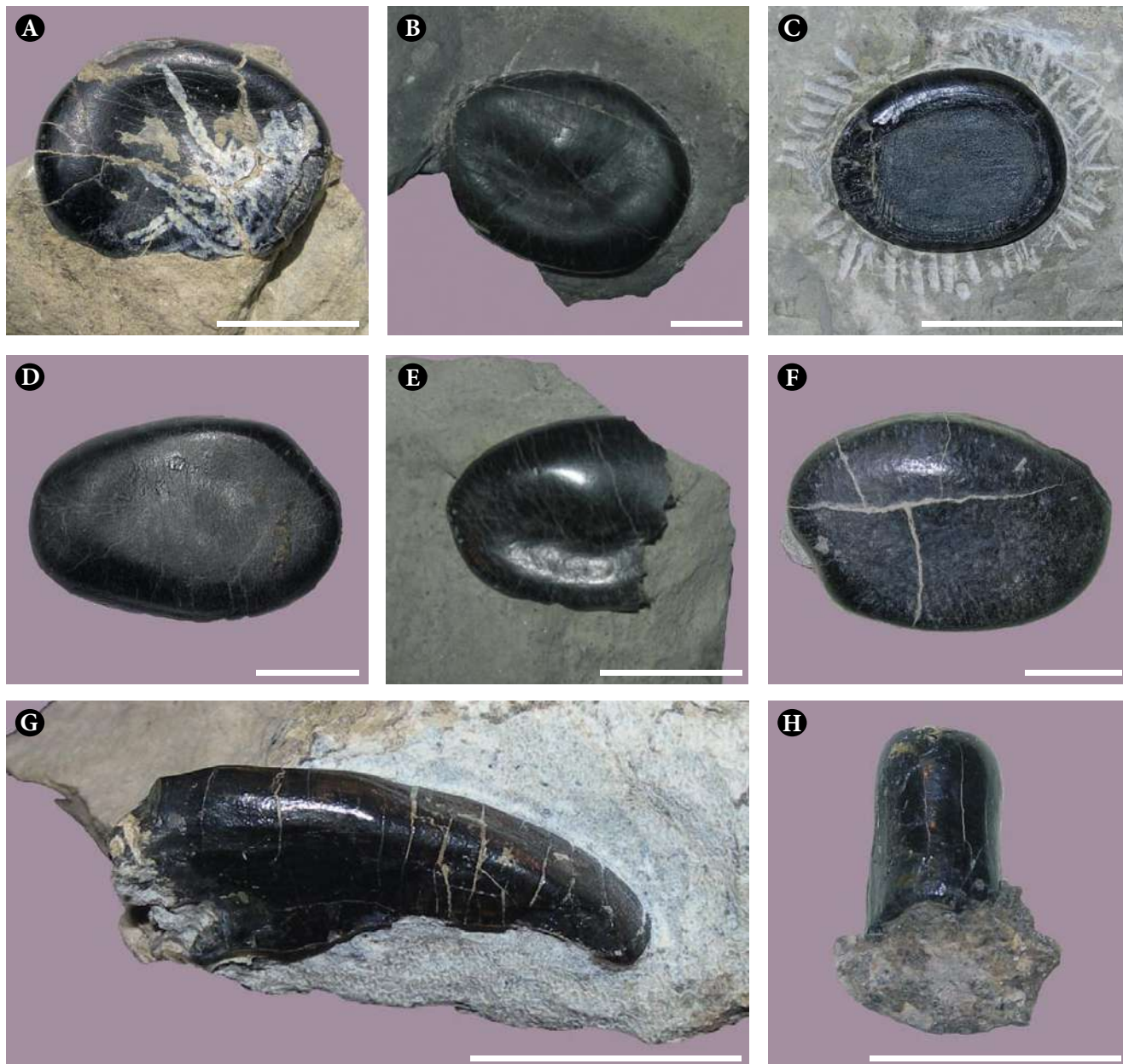


Fig 10 - Placodont teeth from the lower Carnian Rio del Lago Formation of Dogna localities (Julian Alps). A) MFSN 19885, tooth plate; B) MFSN 46846, tooth plate; C) MFSN 27853, tooth plate; D) MFSN 46867, tooth plate; E) MFSN 42755, tooth plate; F) MFSN 13182, tooth plate; G) MFSN 46857, rostral tooth; H) MFSN 13185, rostral tooth. Scale bar equals 10 mm.

- Denti di placodonte dal Carnico inferiore (Formazione di Rio del Lago) delle località nei dintorni di Dogna (Alpi Giulie). A) MFSN 19885, corona piatta; B) MFSN 46846, corona piatta; C) MFSN 27853, corona piatta; D) MFSN 46867, corona piatta; E) MFSN 42755, corona piatta; F) MFSN 13182, corona piatta; G) MFSN 46857, dente rostrale; H) MFSN 13185, dente rostrale. La scala è lunga 10 mm.

Reptilia, Diapsida, Sauropterygia, Eosauropterygia, 'Pachypleurosauria'
 51367 ?'Pachypleurosauria' indet. - small neural arch.

Reptilia, Diapsida, Sauropterygia, Eosauropterygia
 51366 ?Eosauropterygia - tooth crown.
 51372 ?Eosauropterygia - tooth crown fragment.

Reptilia, Diapsida, Sauropterygia, Eosauropterygia, Nothosauria, Simosauridae, Simosaurus
 51358 *Simosaurus* aff. *gaillardoti* - fragment of a neural spine.
 51357 *Simosaurus* aff. *gaillardoti* - nearly complete dorsal vertebra (with apparently fused neural arch).

Reptilia, Diapsida, Archosauriformes, Archosauriformes
 51361 Archosauriformes sp. - nearly complete tooth.
 51368 Archosauriformes sp. - tooth crown.
 51369 Archosauriformes sp. - tooth crown fragment.
 51371 Archosauriformes sp. - tooth crown fragment.
 51373 Archosauriformes sp. - tooth crown fragment.

4.5.2 DOGNA, FROM UNKNOWN SITES IN THE MUNICIPALITY TERRITORY

Supposedly all from the Rio del Lago Formation, if not otherwise specified.

Reptilia
 21328 *Reptilia* indet. - several fragmentary bone ?plates.
 21334 *Reptilia* indet. - bone fragment.
 21336 *Reptilia* indet. - small damaged vertebral centrum.
 22692 *Reptilia* indet. - bone fragment.
 22693 *Reptilia* indet. - bone fragment.
 22694 *Reptilia* indet. - bone fragment.
 22871 *Reptilia* indet. - proximal portion of a ?humerus.
 26361 *Reptilia* indet. - bone fragment. Probably from the Schlern/Sciliar Dolostone (Ladinian).
 35951 *Reptilia* indet. - small bone fragment.

Reptilia, Diapsida, Sauropterygia
 21336 *Sauropterygia* indet. - fragment of a vertebral centrum.

Reptilia, Diapsida, Sauropterygia, Placodontia
 22691 *Placodontia* indet. - tooth plate fragment.
 33434 *Placodontia* indet. - damaged tooth plate.

Reptilia, Diapsida, Sauropterygia, Placodontia, Cyamodontoidea

19885 *Cyamodontoidea* indet. - tooth plate (Fig. 10A).
 Figured in DALLA VECCHIA (2008b).
 21335 *Cyamodontoidea* indet. - osteoderm.
 44193/4 *Cyamodontoidea* indet. - armour fragments, possibly from a single armour.

Reptilia, Diapsida, Sauropterygia, Eosauropterygia
 21331 *Eosauropterygia* indet. - small neural arch nearly totally conglobate in the rock. To be prepared.

Reptilia, Diapsida, Sauropterygia, Eosauropterygia
 25767 ?*Eosauropterygia* - tooth crown. Described, determined and figured in DALLA VECCHIA & AVANZINI (2002).
 25768 ?*Eosauropterygia* - tooth crown. Described, determined and figured in DALLA VECCHIA & AVANZINI (2002).

Reptilia, Diapsida, Sauropterygia, Eosauropterygia, Pistosauria, Bobosaurus
 21329 cfr. *Bobosaurus forojuliensis* - neural spine of a dorsal vertebra in transverse cross-section.

Reptilia, Diapsida, Archosauriformes, Archosauriformes
 21327/1 Archosauriformes sp. - tooth crown. Described, determined and figured in DALLA VECCHIA & AVANZINI (2002); figured in DALLA VECCHIA (2008b).

4.5.3 DOGNA, MOUNT CARNIZZA FLANK

Reptilia, Diapsida, Sauropterygia, Placodontia
 42755 *Placodontia* - tooth plate fragment (Fig. 10E).

4.5.4 DOGNA, SURROUNDINGS OF PLEZZICHE

Reptilia, Diapsida, Sauropterygia, Eosauropterygia
 27231 *Eosauropterygia* indet. - damaged small vertebral centrum.

4.5.5 DOGNA, IN THE DEBRIS OF THE TORRENT FELLA BED NEAR BALADOR LOCALITY
 Fossils are probably from the Rio del Lago Formation.

Reptilia
 25498 *Reptilia* indet. - bone fragment

Reptilia, Diapsida, Sauropterygia, Placodontia
 25496 ?*Placodontia* indet. - skull fragment.

4.5.6 DOGNA, CHIOUT ZUCUIN LOCALITY
 Specimens are from the Rio del Lago Formation.

Reptilia
 26732 *Reptilia* indet. - fragment of a ?rib shaft.

Reptilia, Diapsida, Sauropterygia, Placodontia
 27232 *Placodontia* indet. - tooth plate fragment.

Reptilia, Diapsida, Sauropterygia, Placodontia, Cyamodontoidea, Protenodontosauridae, Protenodontosaurus
 1819 *Protenodontosaurus italicus* PINNA, 1990 (holotype) - an almost complete skull, completely freed from

the matrix and uncrushed (Fig. 11). Described, determined and figured in PINNA (1990), NOSOTTI & PINNA (1999) and RIEPPEL (2000, 2001); mentioned in SIRNA et al. (1994); figured in DALLA VECCHIA (2008b); CT scans figured and described in NEENAN et al. (2014).

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Nothosauria, Nothosauridae, Nothosaurus

31735 ?*Nothosaurus* - incomplete mandibular ramus, near the water fall of the Chiout Zucuin Brook.

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Nothosauria, Simosauridae, Simosaurus

16928 ?*Simosaurus* - several more or less complete dorsal ribs. To be prepared.

4.5.7 DOGNA, BETWEEN MARTIN AND BALADOR LOCALITIES

Reptilia

31821 *Reptilia* indet. - bone fragment. Supposedly from the Rio del Lago Formation.

4.5.8 DOGNA, LAVAZ BROOK

This locality has yielded many sauropterygian remains (indeterminate remains probably belong to sauropterygians too). They were found scattered in the brook debris and in landslides made of rock fragments from the Rio del Lago Formation. However, all of the remains referred to *Simosaurus* come from a single short section of this Formation cropping out in the upper part of the Lavaz Brook ravine at ca. quote 600 m a.s.l.

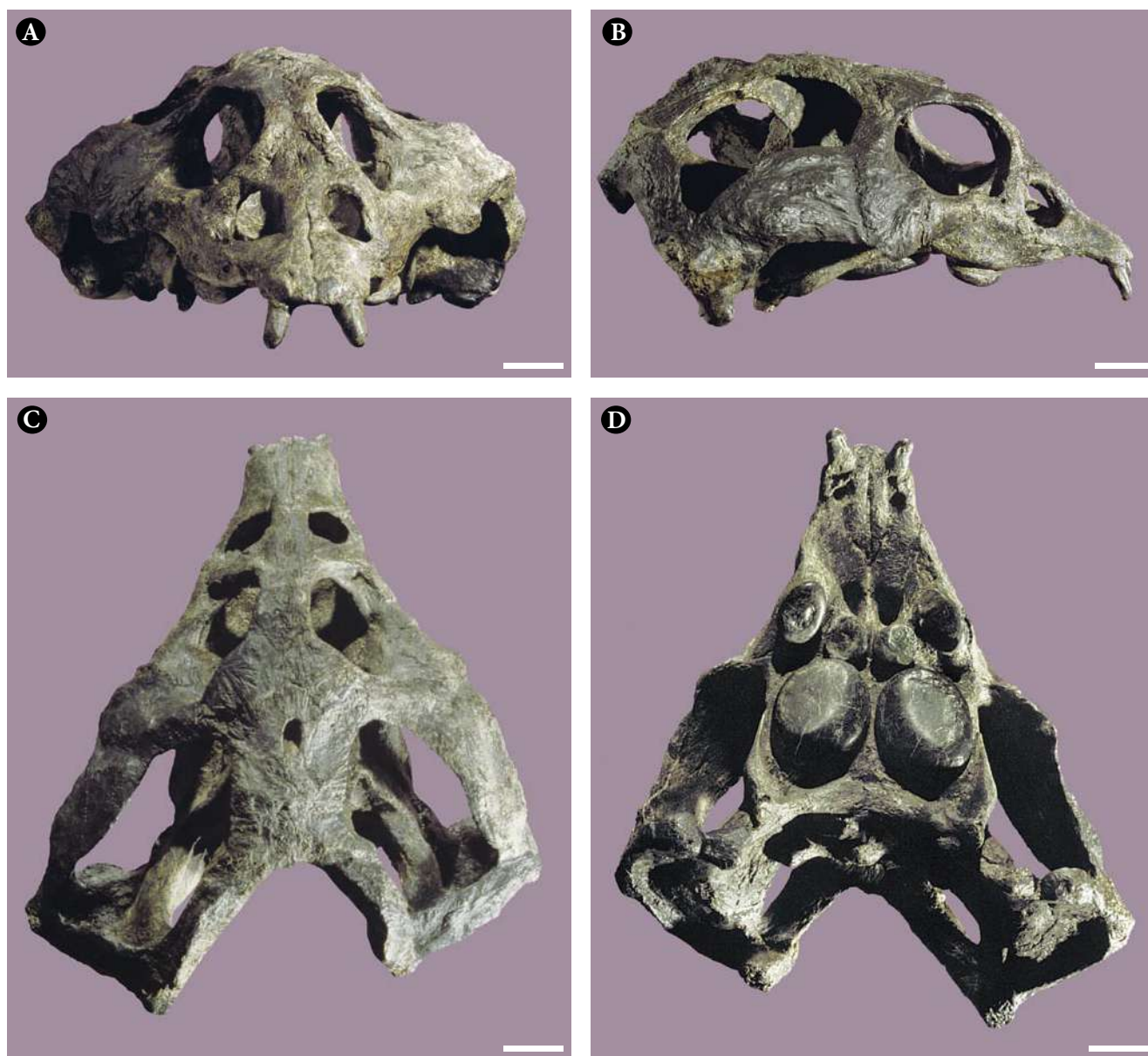


Fig 11 - MFSN 1819, holotype of the cyamodontoid placodont *Protendonotosaurus italicus*, Chiout Zucuin locality (Dogna Valley, Julian Alps), lower Carnian. A) frontal; B) right lateral; C); dorsal; D) palatal views. Scale bar equals 10 mm.

- MFSN 1819, olotipo del placodonte ciamodontoideo *Protendonotosaurus italicus*, Chiout Zucuin (Val Dogna, Alpi Giulie), Carnico inferiore. Vista A) frontale; B) laterale destra; C); dorsale; D) palatale. La scala è lunga 10 mm.

Reptilia

- 22037 Reptilia indet. - bone fragment, Balador locality.
 26755 Reptilia indet. - fragments of two long bones.
 31800 Reptilia indet. - small mesopodial.
 31806 Reptilia indet. - proximal portion of a small long bone.
 31807 Reptilia indet. - bone fragment.
 31811 Reptilia indet. - bone fragment.
 31813 Reptilia indet. - bone fragment.
 31815 Reptilia indet. - bone fragment.
 31823 Reptilia indet. - bone fragment.
 34919 Reptilia indet. - vertebral fragment.
 34985 Reptilia indet. - bone fragment.
 34986 Reptilia indet. - bone fragment.
 34987 Reptilia indet. - bone fragment.
 34988 Reptilia indet. - bone fragment.
 46847 Reptilia indet. - conical, elongated and fluted tooth crown, Balador locality.
 46899 Reptilia indet. - large fragment of a bone from the girdles or skull, ca. quote 600 m a.s.l.. To be prepared.
 46900 Reptilia indet. - girdle bone fragment, ca. quote 600 m a.s.l..
 46906 Reptilia indet. - bone fragment, ca. quote 600 m a.s.l..
 46907 Reptilia indet. - fragment of a girdle bone, ca. quote 600 m a.s.l..
 46908 Reptilia indet. - fragment of a girdle bone, ca. quote 600 m a.s.l..
 46909 Reptilia indet. - bone fragment, ca. quote 600 m a.s.l..
 46910 Reptilia indet. - 82 small bone fragments, including two fragments of girdle elements, 50 rib shaft or neural spine fragments, three fragments of vertebral centra and one limb bone fragment, ca. quote 600 m a.s.l.. Probably, they belong to *Simosaurus* aff. *gaillardoti*, but they are too fragmentary to be sure about this attribution.
 46911 Reptilia indet. - 10 bone fragments including a placodont osteoderm, some small rib fragments and two vertebral fragments, ca. quote 600 m a.s.l..
 46913 Reptilia indet. - bone fragment, ca. quote 600 m a.s.l..
 46914 Reptilia indet. - rib fragment, ca. quote 600 m a.s.l..
 46915 Reptilia indet. - two bone fragments, ca. quote 600 m a.s.l..
 46916 Reptilia indet. - 75 rock fragments containing bone fragments (mainly portion of vertebrae and ribs, but also other skeletal elements), probably mostly belonging to *Simosaurus* aff. *gaillardoti*, ca. quote 600 m a.s.l. Preparation is necessary to identify the bone fragments.

Reptilia, Diapsida, Sauropterygia

- 46902 Sauropterygia indet. - girdle bone fragment, ca. quote 600 m a.s.l.

Reptilia, Diapsida, Sauropterygia, Placodontia

- 27691 ?Placodontia - skull fragment, Balador locality.

- 46865 ?Placodontia - fragment of a coracoid, Balador locality.
 46901 ?Placodontia - ?coracoid fragment, ca. quote 600 m a.s.l..
 48294 ?Placodontia indet. - fragment of a girdle bone, Balador locality (preserved in a pebble).
 24596 Placodontia indet. - tooth fragment, Balador locality.
 31810 Placodontia indet. - tooth fragment.
 37489 Placodontia indet. - tooth plate fragment. Between Prerit di Sopra and Prerit di Sotto.
 46855 Placodontia indet. - tooth plate fragment, Balador locality.
 46856 Placodontia indet. - tooth plate, Balador locality.
 46857 Placodontia indet. - rostral tooth (Fig. 10G), Balador locality.
 46866 Placodontia indet. - tooth plate, Balador locality.
 46867 Placodontia indet. - tooth plate (Fig. 10D), Balador locality.
 46868 Placodontia indet. - rostral tooth crown, Balador locality.
 46870 Placodontia indet. - rostral tooth, Balador locality.
 46872 Placodontia indet. - tooth plate, Balador locality.
 46873 Placodontia indet. - rostral tooth, Balador locality.
 46874 Placodontia indet. - damaged tooth plate, Balador locality

Reptilia, Diapsida, Sauropterygia, Placodontia, Cyamodontoidea

- 31799 Cyamodontoidea indet. - fragmentary osteoderm.
 34918 Cyamodontoidea indet. - two osteoderms.

Reptilia, Diapsida, Sauropterygia, Eosauropterygia

- 25046 Eosauropterygia indet. - cross-sectioned small neural arch, from the debris.
 26635/1 Eosauropterygia indet. - small neural arch, Balador locality.
 31803 Eosauropterygia indet. - small neural arch.
 31816 Eosauropterygia indet. - small neural arch.
 31818 Eosauropterygia indet. - small neural arch.
 34916 Eosauropterygia indet. - dorsal vertebral centrum.
 34917 Eosauropterygia indet. - dorsal vertebral centrum.
 46851 Eosauropterygia indet. - small neural arch, Balador locality.

Reptilia, Diapsida, Sauropterygia, Eosauropterygia, 'Pachypleurosauria'

- 31817 ?'Pachypleurosauria' indet. - small centrum. Determined and figured in DALLA VECCHIA (2008a).
 31801 ?'Pachypleurosauria' indet. - small centrum. Determined and figured in DALLA VECCHIA (2008a).

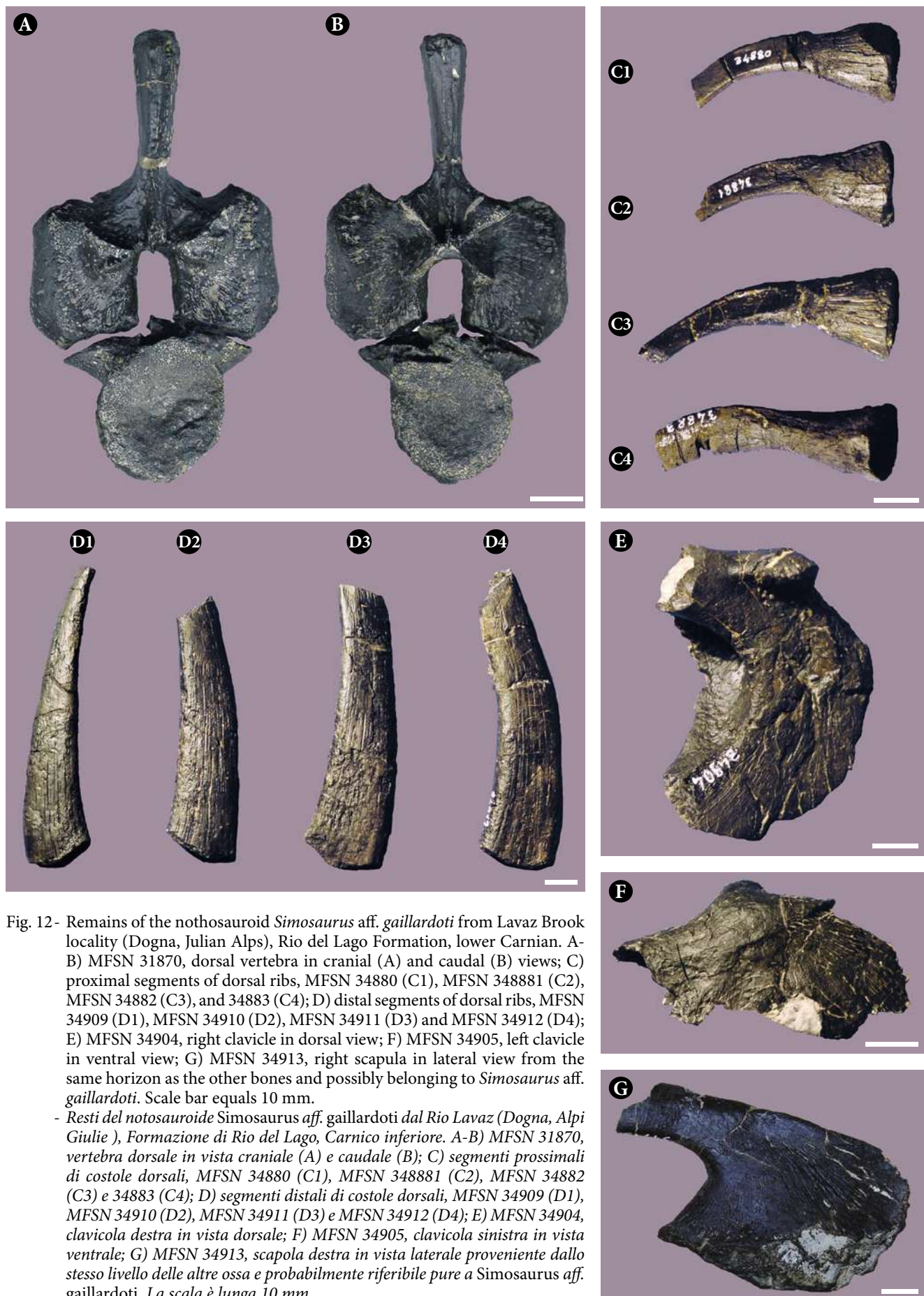


Fig. 12- Remains of the nothosauroid *Simosaurus* aff. *gaillardoti* from Lavaz Brook locality (Dogna, Julian Alps), Rio del Lago Formation, lower Carnian. A-B) MFSN 31870, dorsal vertebra in cranial (A) and caudal (B) views; C) proximal segments of dorsal ribs, MFSN 34880 (C1), MFSN 348881 (C2), MFSN 34882 (C3), and 34883 (C4); D) distal segments of dorsal ribs, MFSN 34909 (D1), MFSN 34910 (D2), MFSN 34911 (D3) and MFSN 34912 (D4); E) MFSN 34904, right clavicle in dorsal view; F) MFSN 34905, left clavicle in ventral view; G) MFSN 34913, right scapula in lateral view from the same horizon as the other bones and possibly belonging to *Simosaurus* aff. *gaillardoti*. Scale bar equals 10 mm.

- Resti del notosauroide *Simosaurus* aff. *gaillardoti* dal Rio Lavaz (Dogna, Alpi Giulie), Formazione di Rio del Lago, Carnico inferiore. A-B) MFSN 31870, vertebra dorsale in vista craniale (A) e caudale (B); C) segmenti prossimali di costole dorsali, MFSN 34880 (C1), MFSN 348881 (C2), MFSN 34882 (C3) e 34883 (C4); D) segmenti distali di costole dorsali, MFSN 34909 (D1), MFSN 34910 (D2), MFSN 34911 (D3) e MFSN 34912 (D4); E) MFSN 34904, clavicola destra in vista dorsale; F) MFSN 34905, clavicola sinistra in vista ventrale; G) MFSN 34913, scapola destra in vista laterale proveniente dallo stesso livello delle altre ossa e probabilmente riferibile pure a *Simosaurus* aff. *gaillardoti*. La scala è lunga 10 mm.

31802 ?'Pachypleurosauria' indet. - small centrum. Determined and figured in DALLA VECCHIA (2008a).

Reptilia, Diapsida, Sauropterygia, Eusauropterygia

34914 Eusauropterygia indet. - ?left ilium. Described, determined and figured in DALLA VECCHIA (2008a).

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Nothosauroidae

46903 Nothosauroidae indet. - coracoid fragment, ca. quote 600 m a.s.l.

46904 Nothosauroidae indet. - coracoid fragment, ca. quote 600 m a.s.l.

46905 Nothosauroidae indet. - coracoid fragment, ca. quote 600 m a.s.l.

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Nothosauria, Simosauridae, Simosaurus

34853-54, 34856-57 ?*Simosaurus* - small rib shaft fragments, ca. quote 600 m a.s.l.

34906 ?*Simosaurus* - probable sacral rib, ca. quote 600 m a.s.l. Described, determined and figured in DALLA VECCHIA (2008a).

34913 ?*Simosaurus* - right scapula (Fig. 12G), ca. quote 600 m a.s.l. Described, determined and figured in DALLA VECCHIA (2008a).

34915 ?*Simosaurus* - tooth crown, ca. quote 600 m a.s.l. Described, determined and figured in DALLA VECCHIA (2008a).

34955 ?*Simosaurus* - rib shaft fragments, ca. quote 600 m a.s.l.

34956 ?*Simosaurus* - rib shaft fragments, ca. quote 600 m a.s.l.

46845 ?*Simosaurus* - several incomplete dorsal ribs, Balador locality.

34933 *Simosaurus* sp. - mid-rib shaft fragments, ca. quote 600 m a.s.l.

34942 *Simosaurus* sp. - small rib shaft fragments, ca. quote 600 m a.s.l.

31870 *Simosaurus* aff. *gaillardoti* - Complete dorsal vertebra (Fig. 12A-B), ca. quote 600 m a.s.l. Described, determined and figured in DALLA VECCHIA (2008a); figured in DALLA VECCHIA (2008b).

34855, 34869, 34871-79, 34934-41, 34943-50 *Simosaurus* aff. *gaillardoti* - distal portions of dorsal ribs (27 specimens), ca. quote 600 m a.s.l. Determined in DALLA VECCHIA (2008a).

34858-61, 34863-65, 34867-68, 34879 *Simosaurus* aff. *gaillardoti* - dorsal rib shaft fragments (10 specimens), ca. quote 600 m a.s.l. Determined in DALLA VECCHIA (2008a).

34880-83 *Simosaurus* aff. *gaillardoti* - Proximal portions of dorsal ribs (four specimens: 34880, Fig. 12C1; 34881, Fig. 12C2; 34882, Fig. 12C3; 34883, Fig. 12C4), ca. quote

600 m a.s.l. Described, determined and figured in DALLA VECCHIA (2008a).

34884-87 *Simosaurus* aff. *gaillardoti* - Dorsal neural arches, complete and isolated (four specimens). Specimen 34884 preserves part of the vertebral centrum, ca. quote 600 m a.s.l. Described, determined and figured in DALLA VECCHIA (2008a).

34888-90 *Simosaurus* aff. *gaillardoti* - Two dorsal neural arches, complete and isolated, ca. quote 600 m a.s.l. Described, determined and figured in DALLA VECCHIA (2008a).

34891, 34893, 34894, 34896, 34898, 34900, 34902 *Simosaurus* aff. *gaillardoti* - isolated dorsal centra (seven specimens), ca. quote 600 m a.s.l. Determined in DALLA VECCHIA (2008a).

34892, 34903, 34907, 34908 *Simosaurus* aff. *gaillardoti* - apical parts of neural spines (four specimens), ca. quote 600 m a.s.l. Determined in DALLA VECCHIA (2008a). 34907 figured in DALLA VECCHIA (2008a).

34895, 34897, 34899, 34901 *Simosaurus* aff. *gaillardoti* - partial transverse processes of dorsal vertebrae (four specimens), ca. quote 600 m a.s.l. Determined in DALLA VECCHIA (2008a).

34904 *Simosaurus* aff. *gaillardoti* - partial right clavicle (Fig. 12E), ca. quote 600 m a.s.l. Described, determined and figured in DALLA VECCHIA (2008a).

34905 *Simosaurus* aff. *gaillardoti* - partial left clavicle (Fig. 12F), ca. quote 600 m a.s.l. Described, determined and figured in DALLA VECCHIA (2008a).

34909-12, 34920-32 *Simosaurus* aff. *gaillardoti* - distal portions of dorsal ribs (17 specimens; 34909, Fig. 12D1; 34910, Fig. 12D2; 34911, Fig. 12D3; 34912, Fig. 12D4), ca. quote 600 m a.s.l. Described, determined and figured in DALLA VECCHIA (2008a).

34951-53, 34957 *Simosaurus* aff. *gaillardoti* - distal fragments of rib shafts (four specimens), ca. quote 600 m a.s.l.

34960-62, 34964-72 *Simosaurus* aff. *gaillardoti* - 12 proximal portions of dorsal ribs, ca. quote 600 m a.s.l. Determined in DALLA VECCHIA (2008a).

34973-84 *Simosaurus* aff. *gaillardoti* - 12 incomplete proximal portions of dorsal ribs, ca. quote 600 m a.s.l. Determined in DALLA VECCHIA (2008a).

34996 *Simosaurus* aff. *gaillardoti* - incomplete vertebral centrum with the basal portion of its neural arch, ca. quote 600 m a.s.l. Determined in DALLA VECCHIA (2008a).

46912 *Simosaurus* aff. *gaillardoti* - two bone fragments one of which is a distal segment of a dorsal rib, ca. quote 600 m a.s.l.

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Nothosauria, Nothosauridae, Nothosaurus

21133 *Nothosaurus* sp. - neural arch. Described, determined and figured in RIEPPEL & DALLA VECCHIA (2001); figured in DALLA VECCHIA (2008b).

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Pistosauria, Bobosaurus

46852 ?*Bobosaurus forojuliensis* - tooth crown, Balador locality.

Reptilia, Diapsida, Archosauromorpha, Archosauriformes

46864 Archosauriformes indet. - tooth crown, Balador locality.

4.5.9 DOGNA, TERRA ROSSA BROOK

The specimens are from the Rio del Lago Formation (see PRETO et al. 2005).

Reptilia, Diapsida, Sauropterygia, Eusauropterygia

25043 Eusauropterygia indet. - cross-sectioned small neural arch, from the debris.

Reptilia, Diapsida, Archosauromorpha, Archosauriformes

28357/1 Archosauriformes indet. - incomplete tooth crown. To be prepared.

4.5.10 DOGNA VALLEY, UNNAMED BROOK BETWEEN CHIOU DI PUPPE AND CHIOU DI GUS LOCALITIES

Reptilia, Diapsida, Sauropterygia, Eusauropterygia

21132 Eusauropterygia - Fragment of a femur, Rio del Lago Formation.

4.5.11 DOGNA, MAS BROOK

Reptilia

21328 Reptilia indet. - fragmentary long bone, supposedly from the Rio del Lago Formation.

4.5.12 DOGNA, MONTASIO BROOK

Reptilia, Diapsida, Sauropterygia, Placodontia

46846 Placodontia indet. - tooth plate (Fig. 10B), supposedly from the Rio del Lago Formation.

4.5.13 DOGNA, PONTUZ BROOK

All of the specimens from this locality are plausibly from the Rio del Lago Formation (DALLA VECCHIA 2008b).

Reptilia indet.

1926 Reptilia indet. - bone fragment.

1927 Reptilia indet. - bone fragments.

1930 Reptilia indet. - bone fragment.

13186 Reptilia indet. - conical and finely striated tooth crown.

13188 Reptilia indet. - four bone fragments.

13189 Reptilia indet. - two bone fragments.

13190 (partim) Reptilia indet. - fragment of a conical and finely striated tooth crown.

19932 Reptilia indet. - bone fragments.

20569 Reptilia indet. - bone fragments.

20646 Reptilia indet. - bone fragment.

20647 Reptilia indet. - bone fragment.

20648 Reptilia indet. - bone fragment.

20650 Reptilia indet. - 20 indeterminate bone fragments.

22274 Reptilia indet. - large holocephalous dorsal rib.

25769 Reptilia indet. - fragmentary bone still mostly conglobated in the rock. To be prepared.

25770 Reptilia indet. - rib shaft fragment.

26456 Reptilia indet. - long bone shaft fragment.

28169 Reptilia indet. - bone fragment.

41625 Reptilia indet. - rib fragment, still mostly conglobated in the rock.

46477 Reptilia indet. - bone fragment.

46878 Reptilia indet. - large bone fragments.

46879 Reptilia indet. - long bone fragment.

46880 Reptilia indet. - partial ?pubis. To be prepared.

46882 Reptilia indet. - rib shaft fragment and neural arch fragment.

46884 Reptilia indet. - possible fragment of a girdle bone. To be prepared.

46887 Reptilia indet. - metapodial.

46888 Reptilia indet. - partial ?coracoid.

46890 Reptilia indet. - small shaft fragment.

46891 Reptilia indet. - fragment of a diminutive long bone.

46895 Reptilia indet. - extremity of a long bone.

46898 Reptilia indet. - bone fragment.

48290 Reptilia indet. - fragment of a long bone.

48291 Reptilia indet. - two ?skull fragments.

48292 Reptilia indet. - small vertebra mostly conglobated in the rock. To be prepared.

Reptilia, Diapsida, Sauropterygia, Placodontia

12390 ?Placodontia - partial ?skull. To be prepared.

22222 ?Placodontia - cross-sectioned skull fragment.

10225 Placodontia indet. - tooth plate fragment

13182 Placodontia indet. - two isolated tooth plates (Fig. 10F, the largest of the two).

13185 Placodontia indet. - rostral tooth crown (Fig. 10H).

15238 Placodontia indet. - tooth plate.

41626 Placodontia indet. - damaged tooth plate still mostly conglobated in the rock.

44182 Placodontia indet. - tooth plate.

44183 Placodontia indet. - tooth plate fragment.

44183 Placodontia indet. - tooth plate fragment.

46894 Placodontia indet. - damaged tooth plate.

Reptilia, Diapsida, Sauropterygia, Placodontia, Cyamodontoidea

1929 Cyamodontoidea indet. - armour fragments.

20649 Cyamodontoidea indet. - Isolated osteoderm.

- 26791 *Cyamodontoidea* indet. - armour fragment.
 25735 *Cyamodontoidea* indet. - Armour fragments with some vertebrae. Partly figured in DALLA VECCHIA (2008b).
 44210 *Cyamodontoidea* indet. - impression of some osteoderms. Probably it belongs to 25735.
 46470 *Cyamodontoidea* indet. - two armour fragments.
 46471 *Cyamodontoidea* indet. - fragmentary osteoderm.
 46472 *Cyamodontoidea* indet. - three armour fragments, a ?gastralium and a fragment of another ?gastralium.
 46473 *Cyamodontoidea* indet. - some fragmentary osteoderms.
 46474 *Cyamodontoidea* indet. - armour fragment and a ?gastralium. Specimens 46472-74 are probably from a same individual. They come all from a landslide located at the beginning of the first left affluent of the Pontuz Brook upward the brook where the *Bobosaurus forojuliensis* holotype was found, south-east of Gran Colle village.
 46475 *Cyamodontoidea* indet. - fragmentary osteoderm and the impression of another osteoderm fragment.
 46883 *Cyamodontoidea* indet.- ?armour fragments.
 46885 *Cyamodontoidea* indet.- two ?armour fragments.



Fig. 13- MFSN 27285, holotype of the pistosaurid sauropterygian *Bobosaurus forojuliensis* from Pontuz Brook locality (Dogna, Julian Alps), Rio del Lago Formation, lower Carnian. Scale bar equals 100 mm.
 - MFSN 27285, oltipo del saurotterigio pistosauride *Bobosaurus forojuliensis* dal Rio Pontuz (Dogna, Alpi Giulie), Formazione di Rio del Lago, Carnico inferiore. La scala è lunga 100 mm.

Reptilia, Diapsida, Sauropterygia, Placodontia, Cyamodontoidea, Protenodontosauridae

1923 *Protenodontosaurus italicus* (referred specimen) - partial skull. Determined and indicated as referred specimen in PINNA (1990); described in NOSOTTI & PINNA (1999).

Reptilia, Diapsida, Sauropterygia, Eosauropterygia

21417 *Eosauropterygia* indet. - sectioned small neural arch.

27231 *Eosauropterygia* indet. - diminutive and damaged scapula.

46881 *Eosauropterygia* indet. - small humerus.

46889 *Eosauropterygia* indet. - small vertebral centrum.

46896 *Eosauropterygia* indet. - fragment of a neural arch.

46897 *Eosauropterygia* indet. - small vertebral centrum.

Reptilia, Diapsida, Sauropterygia, Eusauropterygia

20651 *Eusauropterygia* indet. - fragment of large vertebral centrum.

Reptilia, Diapsida, Sauropterygia, Nothosauria, Simosauridae, Simosaurus

27854 cfr. *Simosaurus* - partial dorsal neural arch. Described, determined and figured in DALLA VECCHIA (2006a), where it is indicated as a referred specimen of *Bobosaurus forojuliensis*. Emended by DALLA VECCHIA (2017), where it is tentatively referred to *Simosaurus*.

46886 *Simosaurus* aff. *gaillardoti* - unfused centrum and partial neural arch of the same vertebra.

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Nothosauria, Nothosauridae, Nothosaurus

20678 *Nothosaurus* sp. - tooth crown.

Reptilia, Diapsida, Sauropterygia, Eusauropterygia, Pistosauria, Bobosaurus

27285 *Bobosaurus forojuliensis* DALLA VECCHIA, 2006a (holotype) - Partial and moderately disarticulated skeleton consisting of the tip of the rostrum with some teeth, part of the cervical portion of the vertebral column, the articulated dorsal and sacral segments of the vertebral column, most of the caudal segment, some gastralia, a humerus, the pelvic girdle and some elements of the hind limbs (Fig. 13). Described and figured in DALLA VECCHIA (2006a, 2017) and FABBRI et al. (2014). Figured also in DALLA VECCHIA (2008b).

4.6 MALBORGHETTO VALBRUNA, SAISERA VALLEY

Reptilia, Diapsida, Sauropterygia, Placodontia

27853/1 *Placodontia* indet. - tooth plate (Fig. 10C), quote 1150 m. along eastern flank of Mount Carnizza. Probably from the Rio del Lago Formation.

42759 *Placodontia* indet. - tooth plate fragment, near the trek to the Bivouac Stuparich. Possibly from the Rio del Lago Formation.

4.7 MALBORGHETTO VALBRUNA, SANTA CATERINA LOCALITY

The stratigraphic reference of this locality is unknown. Probably, the specimen does not come from the Rio del Lago Formation as the rock is relatively coarse sandstone. Its inclusion in the Carnian is tentative.

Reptilia, Diapsida, Sauropterygia

21416 ?*Sauropterygia* - dorsal rib fragment.

4.8 PONTEBBA, GRAVON DI GLERIS LOCALITY

The stratigraphic reference of this locality is unknown. Its inclusion in the Carnian is tentative.

Reptilia

22953 *Reptilia* indet. - bone fragment.

Reptilia, Diapsida, Sauropterygia, Placodontia

22954 ?*Placodontia* - possible rostral tooth.

4.9 PONTEBBA, PLANS, CARBONIRS BROOK

The stratigraphic reference of this locality is unknown. Its inclusion in the Carnian is tentative.

Reptilia

19709 *Reptilia* - vertebral fragment.

5. Upper Triassic - Norian

5.1 VARIOUS LOCALITIES OF THE DOLOMIA DI FORNI FORMATION IN THE CARNIC PREALPS

The Dolomia di Forni Formation is a unit made of dark grey to black or brown, well-bedded, bituminous dolostone with chert, which is 700-850 m thick (DALLA VECCHIA 2012). It crops out as an east to west band for over 30 km in the Carnic Prealps and is a lateral equivalent to the Dolomia Principale Formation (Hauptdolomit of German authors). It represents the deposition in an anoxic marine basin whose maximum depth was about 400 m, and was surrounded by the shallow water carbonate platform of the Dolomia Principale Formation (DALLA VECCHIA 2012). The basin was originated by tensional tectonics at the western end of the Pangean Gulf of Tethys. The age of the Dolomia di Forni Formation is late middle to early late Norian (late Alauanian-early Sevatian) based on its conodont content (DALLA VECCHIA 2012).

The Dolomia di Forni Formation has yielded a peculiar fossil assemblage composed mainly of crustaceans, terrestrial plant remains, marine fishes and terrestrial tetrapods (see DALLA VECCHIA 2012), including some

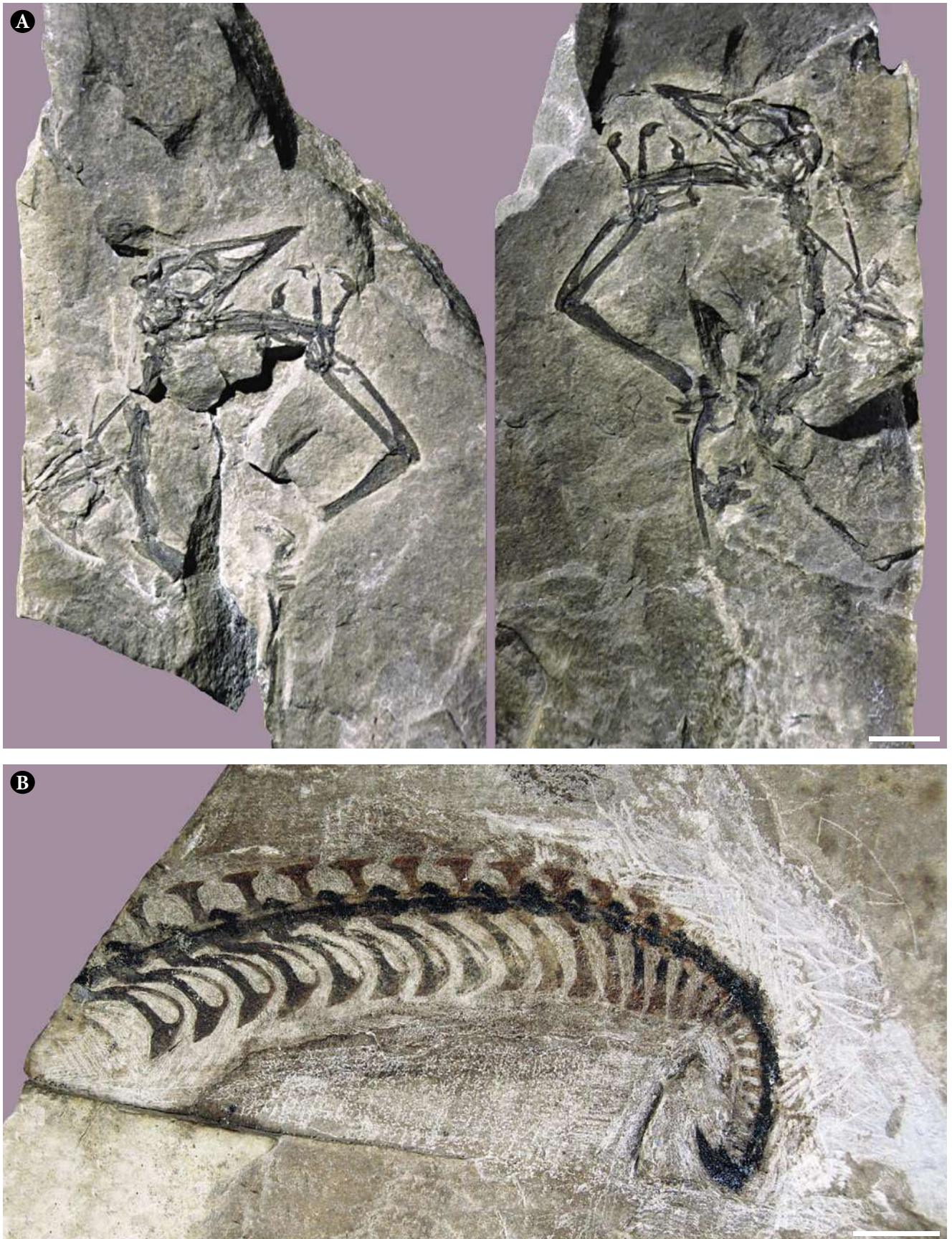


Fig. 14 - *Megalancosaurus preonensis* from Seazza Brook locality (Preone, Carnic Prealps), middle-upper Norian. A) MFSN 1769; holotype, slab and counterslab; B) MFSN18443, caudal vertebral column. Scale bar equals 10 mm.

- *Megalancosaurus preonensis* dal Rio Seazza (Preone, Prealpi Carniche), Norico medio-superiore. A) MFSN 1769; olotipo, lastra e controlastra; B) MFSN18443, colonna vertebrale caudale. La scala è lunga 10 mm.



Fig. 15 - MFSN 1921, *Langobardisaurus pandolfii* from Seazza Brook locality (Preone, Carnic Prealps), middle-upper Norian. Scale bar equals 10 mm.
 - MFSN 1921, *Langobardisaurus pandolfii* dal Rio Seazza (Preone, Prealpi Carniche), Norico medio-superiore. La scala è lunga 10 mm.

of the oldest pterosaurs. Most of those fossils, including the specimens of the archosauromorph *Megalanosaurus preonensis* and of the pterosaur *Preondactylus buffarinii*, come from the Seazza Brook valley near the village of Preone. The terrestrial plants and tetrapods (DALLA VECCHIA 2012) and the composition of the organic matter (SCOTTI et al. 2002) testify to the presence of emergent parts of the carbonate platform close to the marine basin.

5.1.1 ENEMONZO, FORCHIAR BROOK

Reptilia, Diapsida, Archosauromorpha, Pterosauria, Carniadactylus

1797 *Carniadactylus rosenfeldi* (DALLA VECCHIA, 1995) (holotype) - partial articulated skeleton with traces of the non mineralised tissues. Mentioned in Sirna et al. (1994) as Rhamphorhynchoidea indet.; described, determined and figured in DALLA VECCHIA (1995, 2009a); figured in DALLA VECCHIA (2004c, 2006b, 2008b, 2012, 2013a, 2014).

26823 *Carniadactylus rosenfeldi* - three articulated wing phalanges. To be prepared. Determined and figured in DALLA VECCHIA (2014). Its study is in progress by F.M. Dalla Vecchia.

Reptilia, Diapsida, Archosauromorpha, Tanystropheidae
24992/1 *Tanystropheidae* indet. - partial articulated skeleton without skull. To be prepared. Figured in DALLA VECCHIA (2012) and referred to a juvenile specimen of *Langobardisaurus*. Study is in progress by F.M. Dalla Vecchia and S. Renesto.

5.1.2 PREONE, SEAZZA BROOK VALLEY

Reptilia

45422 ?*Reptilia* - bone fragments still mostly covered by rock (they could be fish bones as well as pterosaur wing phalanges). To be prepared.

28437 *Reptilia* indet. - small vertebral centrum, site F1 of DALLA VECCHIA (1991).

Reptilia, Diapsida

39026 *Diapsida* indet. - partial postcranial skeleton, downstream the dam on the Seazza Brook. Study is in progress by F.M. Dalla Vecchia.

Reptilia, Diapsida, Lepidosauromorpha

19235 *Lepidosauromorpha* indet. - a poorly preserved but nearly complete and articulated skeleton. Described, determined and figured in BIZZARINI & MUSCIO (1995) and indicated as holotype of *Langobardisaurus? rossii* BIZZARINI & MUSCIO, 1995; redescribed, determined and figured in RENESTO & DALLA VECCHIA (2007) as a possible rhynchocephalian; figured in DALLA VECCHIA (2006b, 2008b, 2012).

Reptilia, Diapsida, Archosauromorpha, Drepanosauridae, Megalancosaurus

1769 *Megalancosaurus preonensis* CALZAVARA, MUSCIO & WILD, 1981 (holotype) - partial articulated skeleton with skull and lower jaw (Fig. 14A). Described, determined and figured in CALZAVARA et al. (1981); figured and redescribed in RENESTO (1994) and RENESTO & DALLA VECCHIA (2005); discussed and figured in RENESTO (2000), RENESTO et al. (2010) and CASTIELLO et al. (2016); figured in PINNA (1993) and DALLA VECCHIA (2006b, 2008b, 2012).

1801/1 *Megalancosaurus preonensis* - nearly complete and articulated segment of the caudal vertebral column, site F1 of DALLA VECCHIA (1991). Described, determined (as juvenile of *Drepanosaurus*) and figured in PINNA (1988); redescribed and figured in RENESTO (1994, 2000); figured in RENESTO et al. (2010) and DALLA VECCHIA (2006b, 2008b, 2012).

18443 *Megalancosaurus preonensis* - nearly complete and articulated segment of the caudal vertebral column (Fig. 14B). Determined, described and figured in RENESTO



Fig. 16- MFSN 1891, gastric pellet made of bones of *Tanystropheidae* indet., possibly *Langobardisaurus pandolfii*, Seazza Brook locality (Preone, Carnic Prealps), middle-upper Norian. Scale bar equals 10 mm.

- MFSN 1891, rigurgito gastrico costituito da ossa di *Tanystropheidae* indet., forse *Langobardisaurus pandolfii*, dal Rio Seazza (Preone, Prealpi Carniche), Norico medio-superiore. La scala è lunga 10 mm.



Fig. 17- MGC 332466, the pterosaur *Austriadactylus cristatus* from Seazza Brook locality (Preone, Carnic Prealps), middle-upper Norian. Scale bar equals 10 mm.
 - MGC 332466, lo pterosauro *Austriadactylus cristatus* dal Rio Seazza (Preone, Prealpi Carniche), Norico medio-superiore. La scala è lunga 10 mm.

(2000); figured in RENESTO et al. (2010) and DALLA VECCHIA (2006b, 2008b, 2012).

Reptilia, Diapsida, Archosauromorpha, Tanystropheidae

1891 Tanystropheidae indet. - small pellet of bones (Fig. 16), site F1 of DALLA VECCHIA (1991). It was originally identified as a gastric eject of pterosaur bones (cfr. *Preondactylus buffarinii*; DALLA VECCHIA et al., 1989). Subsequent revision by HOLGADO et al. (2015) showed that it most probably belongs to a tanystropheid archosauromorph (possibly *Langobardisaurus*). Figured in DALLA VECCHIA (2004c, 2006b, 2008b, 2012, 2014).

Reptilia, Diapsida, Archosauromorpha, Tanystropheidae, Langobardisaurus

1921 *Langobardisaurus pandolfii* - nearly complete and articulated skeleton including skull and mandible (Fig. 15). Described and figured as the holotype of *Langobardisaurus tonelloi* by MUSCIO (1997); revised, redescribed and figured by RENESTO & DALLA VECCHIA (2000); revised and figured by SALLER et al. (2015); figured in DALLA VECCHIA (2006b, 2008b, 2012).

Reptilia, Diapsida, Archosauromorpha, Pterosauria

19864 Pterosauria indet. - caudal segment of the vertebral column and the terminal wing phalanges, site F1 of DALLA VECCHIA (1991). Described, determined and figured in DALLA VECCHIA (2002); figured in DALLA VECCHIA (2004c, 2006b, 2008b, 2012, 2014).

21545 Pterosauria indet. - partial and disarticulated skeleton. Determined as *Eudimorphodon* sp. and figured in DALLA VECCHIA (2008b); figured in DALLA VECCHIA (2004c, 2006b, 2014). Its study is in progress by Fabio M. Dalla Vecchia.

Reptilia, Diapsida, Archosauromorpha, Pterosauria, Preondactylus

1770 *Preondactylus buffarinii* WILD, 1984 (holotype) - nearly complete and articulated skeleton but mostly preserved as impression of the bones, site F3 of DALLA VECCHIA (1991). Described, determined and figured in WILD (1983); redescribed and figured in DALLA VECCHIA (1998); figured in PINNA (1993) and DALLA VECCHIA (2004c, 2006b, 2008b, 2012, 2013a, 2014).

25161 *Preondactylus buffarinii* - partial skull. Determined and figured in DALLA VECCHIA (2014); figured in DALLA VECCHIA (2003). Its study is in progress by Fabio M. Dalla Vecchia.

Reptilia, Diapsida, Archosauromorpha, Pterosauria, Austriadactylus

MGC 332466 *Austriadactylus cristatus* - partial but articulated skeleton including skull and lower jaw (Fig. 17). Described, determined and figured in DALLA VECCHIA (2009b); figured in DALLA VECCHIA (2006b, 2008b, 2012 and 2014).

5.1.3 FORNI DI SOTTO, PURONE BROOK

Reptilia, Diapsida, Archosauromorpha, Pterosauria, Carniadactylus

1922 cfr. *Carniadactylus rosenfeldi* - parts (humerus, partial mandibular ramus, wing phalanx 2, dorsal vertebrae and ribs) of a disarticulated skeleton. Mentioned in SIRNA et al. (1994) as Rhamphorhynchoidea indet.; described, determined and figured in DALLA VECCHIA (2004a) as *Eudimorphodon* sp.; revised by DALLA VECCHIA (2009a, 2014); figured in DALLA VECCHIA (2004c, 2006b, 2008b, 2012 and 2014).

5.1.4 FORNI DI SOPRA, ROVADIA BROOK

Reptilia, Diapsida, Archosauromorpha, Tanystropheidae, Langobardisaurus

26829 *Langobardisaurus pandolfii* - partial hind limbs. Described, determined and figured in RENESTO et al. (2002); figured in DALLA VECCHIA (2006b, 2012).

Reptilia, Diapsida, Archosauromorpha, Pterosauria

19836 Pterosauria indet. - isolated wing phalanx 4. Described, determined and figured in DALLA VECCHIA (2000a); figured in DALLA VECCHIA (2004c, 2006b, 2008b, 2012, 2014).

5.1.5 UPPER TAGLIAMENTO VALLEY, UNKNOWN LOCALITY

Reptilia

31668 Reptilia indet. - tuberculated or ornamented bones and plate-like (placodont-like) teeth in basal view, possibly belonging to a durophagous reptile. To be prepared. Provenance from the Forni Dolostone is hypothetical, because it was found in the river bed debris.

5.2 UPPER TAGLIAMENTO VALLEY, IN THE DEBRIS OF THE RIVER BED NEAR SOCCHIEVE

Reptilia

16932 Reptilia indet. - pebble with fragmentary bones including at least two possible osteoderms, possibly from the Calcare di Chiampomano Formation. To be prepared. Determined and figured in DALLA VECCHIA (2008b).

6. Jurassic

6.1 CAVAZZO CARNICO, FAEIT BROOK, NEAR THE LOCALITY CONCA DI AVRINT

Reptilia indet.

26777/3 Reptilia indet. - tooth fragment. Preserved in a fragment of reddish limestone from the Encriniti del M. Verzegnis Formation.

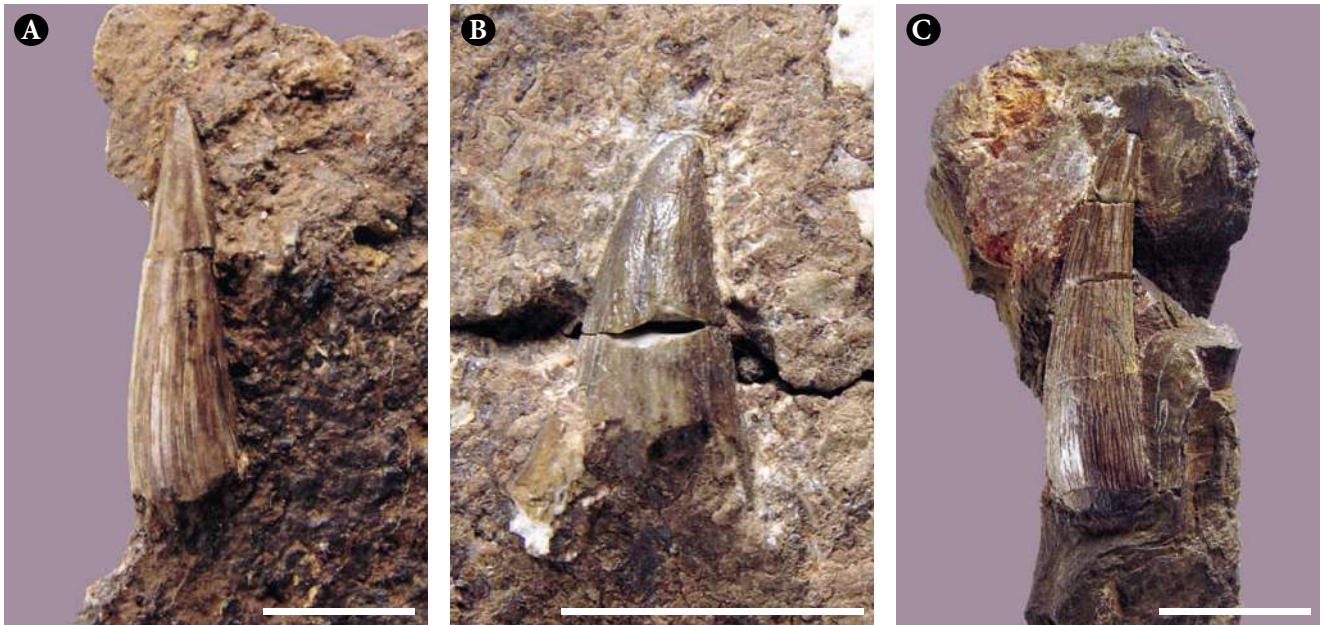


Fig. 18 - Tooth crowns of marine reptiles from the 'marble' quarry of Mount Lovinzola (Verzegnis, Carnic Prealps), Lower-Middle Jurassic (Toarcian-?Bajocian). A-B) MFSN 26696 and 26700, thalattosuchian crocodyliforms, C) MFSN 19874, thalattosuchian crocodyliform or plesiosaurian sauropterygian. Scale bar equals 10 mm.

- Corone dentarie di rettili marini dalla cava di 'marmo' del Monte Lovinzola (Verzegnis, Prealpi Carniche), Giurassico inferiore-medio (Toarciano-?Bajociano). A-B) MFSN 26696 e 26700, coccodrilliforme talattosuco, C) MFSN 19874, coccodrilliforme talattosuco o sauroterigio plesiosauriano. La scala è lunga 10 mm.

6.2 VERZEGNIS, VERZEGNIS MASSIF, MOUNT LOVINZOLA QUARRY

The main site that yielded remains of Jurassic reptiles is a quarry along the north-eastern flank of the Mount Lovinzola in the Verzegnis Massif. They are mostly isolated teeth and bone fragments. They are all preserved into the reddish limestones of the Encrinuri del M. Verzegnis Formation. The environment of deposition was a submarine plateau far away from the areas of carbonate production and with scarce sedimentation. The age of the upper part of the Formation, where the fossils probably come from is Toarcian-?Bajocian (see DALLA VECCHIA 2008b).

Reptilia

- 16273 Reptilia - tooth crown fragment.
- 21388/2 Reptilia - tooth crown fragment.
- 26701/1 Reptilia - tooth crown fragment.
- 31882/1 Reptilia indet. - bone fragment. Figured in DALLA VECCHIA (2008b).

Reptilia, Diapsida, Sauropterygia, Plesiosauria

- 19874 ?Plesiosauria - a crown tooth (Fig. 18C) that alternatively could belong to a thalattosuchian crocodyliform. Figured in DALLA VECCHIA (2008b).

Reptilia, Diapsida, Archosauromorpha, Archosauria, Crocodylomorpha, Thalattosuchia

- 45185 ?Thalattosuchia - tooth crown, mostly still inside the rock.

- 45187 ?Thalattosuchia - tooth crown fragment.

- 26696/1 Thalattosuchia indet. - tooth crown (Fig. 18A).

Figured in DALLA VECCHIA (2008b).

- 26697/1 Thalattosuchia indet. - tooth crown fragment

- 26700 Thalattosuchia indet. - tooth crown (Fig. 18B).

Figured in DALLA VECCHIA (2008b).

- 45182 Thalattosuchia indet. - tooth crown.

- 45190 Thalattosuchia - tooth crown.

- 45191 Thalattosuchia - three tooth crown fragments.

7. Cretaceous

7.1 JULIAN PREALPS, SURROUNDINGS OF MONTENARS

Some vertebrate remains were found in the limestone blocks of the Flysch megabeds: they are dated to the early Eocene, but many blocks of these submarine landslide deposit are Cretaceous in age, as shown by their palaeontological content (DALLA VECCHIA 2008b). It was not possible to unquestionably establish the Palaeogene or Cretaceous age of the few and fragmentary tetrapod remains, because micropalaeontological studies had not been undertaken. Obviously, the specimen tentatively identified as a pterosaur would be Cretaceous in age, if really such.

Reptilia, Diapsida, Archosauromorpha, Archosauria, Crocodyliformes

- 15330 Crocodyliformes indet. - portions of some vertebrae and a partial hind limb. Described, determined



Fig. 19 - MFSN 15331a, purported pterosaur remains from the surroundings of Montenars (Julian Prealps), Cretaceous in age. In the upper left corner, magnification of an alveolate tooth. Scale bar equals 10 mm.

- MFSN 15331a, *presunti resti di pterosauro dai dintorni di Montenars (Prealpi Giulie), datati al Cretaceo. Nell'angolo in alto a sinistra, ingrandimento di un dente inserito nel suo alveolo. La scala è lunga 10 mm.*



and figured in DALLA VECCHIA et al. (2005); figured in DALLA VECCHIA (2008b).

19858 *Crocodyliformes* indet. - distal part of a femur. Described, determined and figured in DALLA VECCHIA et al. (2005); figured in DALLA VECCHIA (2008b).

Reptilia, Diapsida, Archosauromorpha, Pterosauria, Pterodactyloidea

15331 ?*Pterodactyloidea* - some slender and long tooth-bearing bones with slender, conical teeth with thecodont implantation (Fig. 19). They were tentatively referred to a pterosaur, but the doubt remains that they are jaw bones of bony fish with alveolate teeth (e.g. *Ichthyodectiformes*, which, however, usually have stout and robust dentigerous bones) or of another reptile with thecodont implantation. Described, determined and figured in DALLA VECCHIA et al. (2005); figured in DALLA VECCHIA (2008b).

8. Miocene

8.1 FRISANCO, BETWEEN CASASOLA AND POFFABRO, DELLE MOLE BROOK

The only Cenozoic reptile comes from the base of the “arenarie del Rio Mizza” informal unit (belonging to the Early Miocene «Molassa»), referred to the Burdigalian-lower Langhian by DALL’ASTA (1995).

Reptilia, Testudinata, Trionychidae

15254 *Trionychidae* indet. - it is the inner impression of the shell of a marine turtle with fragments of the neural spines of the dorsal vertebrae (Fig. 20). Studied and determined by DALL’ASTA (1995); figured in DALLA VECCHIA (2008b).

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Fig. 20 - MFSN 15254, chelonian (?*Trionychidae*) from Rio delle Mole locality (Frisanco; Carnic Prealps), «Molassa», lower Miocene. Scale bar equals 50 mm
- MFSN 15254, chelone (?*Trionychidae*) rinvenuto lungo il Rio delle Mole (Frisanco, Prealpi Carniche), «Molassa», Miocene inferiore. La scala è lunga 50 mm.

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