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A NEW PTEROSAUR (REPTILIA, PTEROSAURIA) FROM THE UPPER
TRIASSIC (NORIAN) OF FRIULI, ITALY

UN NUOVO PTEROSAURO (REPTILIA, PTEROSAURIA) DEL TRIASSICO
SUPERIORE (NORIANO) DEL FRIULI, ITALIA

Dedicated to Prof. Dr. E. Kuhn-Schnyder
on his 80th birthday

Abstract — A new Upper Triassic pterosaur, *Preondactylus buffarinii* n. gen., n. sp., is described from the Norian of the Preone valley, province of Udine, Italy. The specimen differs from the well-known Upper Triassic pterosaurs *Eudimorphodon* and *Peteinosaurus* mainly in possessing single-cusped *Dorygnathus*-like teeth and in the ratios of the bones of the postcranial skeleton. By means of this method a second uncomplete specimen from the Norian of Endenna, province of Bergamo, Italy, is referred to the new species as cf. *Preondactylus buffarinii*. *Preondactylus* belongs to the family Rhamphorhynchidae. The arboreal theory of the origin of flight in pterosaurs and their supposed eosuchian relationships are reconsidered.

Key words: Pterosauria, Upper Triassic, Udine, Bergamo, Origin of flight, Relationships.

Riassunto breve — Viene descritto un nuovo pterosauro del Triassico superiore, *Preondactylus buffarinii* n. gen., n. sp., proveniente dal Noriano della Val Preone (provincia di Udine, Italia). Questo esemplare differisce dai più conosciuti pterosauri del Triassico superiore, *Eudimorphodon* e *Peteinosaurus*, soprattutto nel possedere denti monocuspidati simili a quelli del *Dorygnathus*, e nei rapporti delle ossa dello scheletro post-craniale. In base a questo metodo viene descritto un secondo esemplare incompleto proveniente dal Noriano di Endenna (provincia di Bergamo, Italia) che viene riferito alla nuova specie come cf. *Preondactylus buffarinii*. Il *Preondactylus* appartiene alla famiglia Rhamphorhynchidae. Viene riconsiderata la teoria arboricola dell'origine del volo nei pterosauri e la loro supposta parentela con gli eosuchi.

Parole chiave: Pterosauri, Triassico Superiore, Udine, Bergamo, Origine del volo, Relazioni di parentela.

Introduction

In spring 1982 Mr. Nando Buffarini of Udine found an almost complete skeleton of a pterosaur in the Norian shaly limestones and dolomites of the Preone valley, province of Udine. The specimen was discovered south of the church in the small village of Madonna Peraries on the Northeast-slope of the Monte Pezzet. The black bones of the skeleton were imbedded in a two to three mm thick yellow-brown marl covering the dolomitic limestone. The specimen broke in several parts during excavation and small pieces were lost. As Mr. Buffarini and his wife fit the parts together and washed them, the marl and the bones were almost completely removed, with the exception of parts of the left hand and foot. Therefore, the skeleton is now preserved only as a natural mould on the surface of the slab (fig. 1). To prepare this specimen

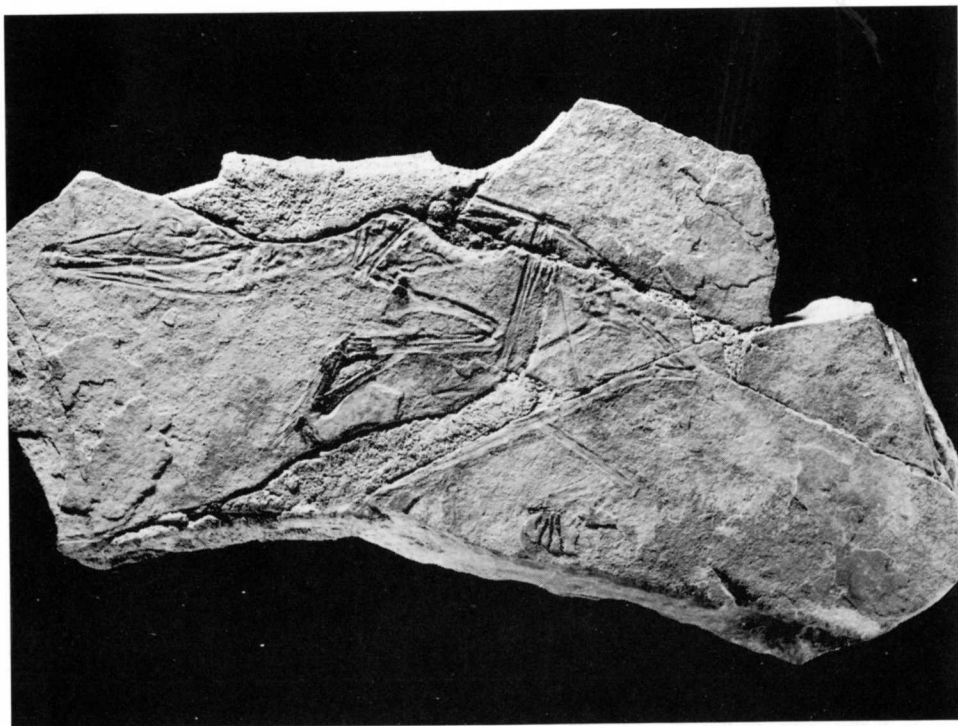


Fig. 1 - *Preondactylus buffarinii* n. gen., n. sp.; no. 1770 MFSN. Natural mould with preserved bones in the carpus and foot. Norian, Val Preone, province of Udine, Italy.
- *Preondactylus buffarinii* n. gen., n. sp.; n. 1770 MFSN. Impronta con le ossa preservate del carpo e del piede. Noriano, Val Preone, provincia di Udine, Italia.

for study, Mr. N. Adorf, preparator of the Staatliches Museum für Naturkunde Stuttgart, took a silicon rubber impression. It shows all the skeletal details that are important for description and comparison (fig. 2). By illuminating the specimen from different directions and different angles, I drew the skeleton under the Wild M5 binocular glass with the help of a drawing mirror (fig. 3).

In September 1982, when I first studied this specimen and took its measurements, I recognized this pterosaur as different from the hitherto known Norian genera *Eudimorphodon* and *Peteinosaurus* (ZAMBELLI, 1973; WILD, 1978). Although the new specimen shows similarities to *Eudimorphodon* (from the Norian of Cene near Bergamo) in the shape of the skull, especially the enlargement of two maxillary teeth between the antorbital fenestra and the orbit; it differs from the latter genus principally in the morphology of the teeth and the ratios of the postcranial bones.

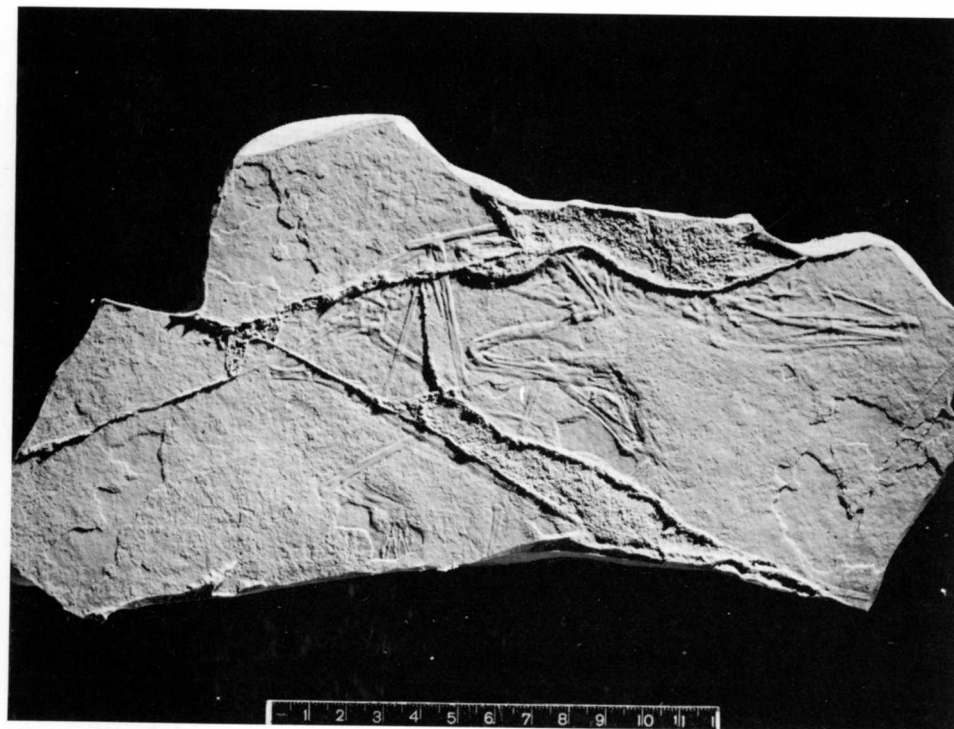


Fig. 2 - *Preondactylus buffarinii* n. gen., n. sp.; no. 1770 MFSN. Silicon-rubber impression of the type specimen.
- *Preondactylus buffarinii* n. gen., n. sp.; n. 1770 MFSN. Calco in gomma di silicone dell'esemplare-tipo.

