

PALAEONTOLOGY OF THE UPPER PLIOCENE MARINE DEPOSITS OF RIO VACCARUZZA, VILLALVERNIA (PIEDMONT, NW ITALY)

GIULIO PAVIA^{1*}, ALFRÉD DULAI², ANDREA FESTA^{1,3}, ROCCO GENNARI¹, MARCO PAVIA¹ & GIORGIO CARNEVALE¹

¹Dipartimento di Scienze della Terra, Università degli Studi di Torino, Via Valperga Caluso 35, I-10125 Torino, Italy.

E-mail: giulio.pavia@unito.it, giorgio.carnevale@unito.it, andrea.festa@unito.it, marco.pavia@unito.it, rocco.gennari@unito.it

²Department of Palaeontology and Geology, Hungarian Natural History Museum, Ludovika Square 2, H-1083 Budapest.

E-mail: dulai.alfred@nhmus.hu

³CNR-IGG, Consiglio Nazionale delle Ricerche, Istituto di Geoscienze e Georisorse, Via Valperga Caluso 35, I-10125 Torino, Italy.

*Corresponding Author.

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Abstract. The topmost Argille Azzurre (beds 1-2) and the basal Sabbie di Asti (beds 3-9) formations in the Villalvernia area are analysed in terms of palaeoecological and taxonomic features; the succession is 6 m thick and dates back to the middle Piacenzian within the *Globorotalia bononiensis* acme. The upper boundary of the clayey Bed 2 corresponds to an unconformity reflecting Pliocene tectonic activity. The study is focused on the fossil assemblages of beds 3, 4 and 9. The sandy Bed 3 yields 362 mollusc taxa; the assemblage is allochthonous and mixes infra- to circalittoral species accumulated by hyperpycnal mass-transport. The same mechanism is responsible for the origin of the overlying fossil unit (Bed 4) with numerous specimens of the *Entobia-Gastrochaenolites* ichnofacies. The autochthonous fossil assemblage of Bed 9 yields 308 molluscs, plus three brachiopods and ten fish taxa; most of them refer to the *Posidonia* meadow (HP), and their autochthony is shown by taphonomic features as skeletal integrity, mixing of successive generations or the limitation to juvenile ontogenetic stages of vagile and temporarily byssate species for which the HP performs a nursery function. Three brachiopods and 52 molluscs are here reported for the first time from the Pliocene of Piedmont. In the final chapter “Systematic Palaeontology” four brachiopods and 29 molluscs are described, among which there are eight new gastropod species: *Crepidula bellardii* n. sp., *Conus dellabellai* n. sp., *Conus villalvernensis* n. sp., *Odetta chirlü* n. sp., *Ondina curta* n. sp., *Ondina elongata* n. sp., *Ondina pseudovitrea* n. sp., *Anisocycla subcylindrica* n. sp.

INTRODUCTION

The toponym Villalvernia is known in the palaeontological literature for its rich Pliocene mollusc record. The conspicuous monographs by Bellardi (1872-1888), Bellardi & Sacco (1890) and Sacco (1890-1904) provided a detailed analysis of the fossil assemblages, which includes the identification

of a large number of new taxa, listed in the catalogues of the celebrated Bellardi & Sacco collection (Ferrero Mortara et al. 1981, 1984; Merlino 2007). Several outcrops of the Villalvernia area were listed by Sacco (1889-90), which also provided a short description of their facies in his monumental “Bacino Terziario e Quaternario del Piemonte”. Many years later Brambilla (1976) described a short-living outcrop exposed on the left side of the Rio Vaccaruzza, in the vicinity of the village of Villalvernia, which

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