ABSTRACT

A Jurassic series, ascribed to the Adria margin of which it represents a continental shelf fragment, crops out in the C. Caldarola area (Piacenza Apennines). This sequence, made up of four lithostratigraphic units of Upper Lias-Hauterivian age, is considered to pass stratigraphically into the Upper Cretaceous Flysch (Scabiazza Sandstones, Cassio U.), whose conglomeratic bottom layers include pebbles from the aforementioned Jurassic sediments.

A detailed structural analysis in the Jurassic sequence has shown a destral transpressional shear zone. Both the mesostructures (P and Riedel shears - R and R') and kinematic indicators (calcite fibres) all show a “top to the NE” shear sense: this finding agrees with the well-known forward-directed transport of the Apenninic nappes.

As in the studied area the geometric position of the whole series, resting on the other tectonic units (namely Pietra Parcellara Complex) from inner sectors, raises paleogeographic and geodynamic objections, some assumptions to settle these matters are put forward.

Unambiguous sedimentological proofs in the Pietra Parcellara Complex (ophiolitic olistoliths, associated with conglomeratic Cretaceous fossiliferous layers reworking the insubric shelf, inside the Palombini Shales) suggest this sedimentary basin in a more internal paleogeographic sector than the Scabiazza Sandstones (and its Jurassic substratum) basin to be located.

On the basis both of stratigraphic data and of present geometric position of these units it is suggested that, after the Ligurid-Emilian nappes piling (Ligurian Phase), the Tuscan Phase produced an activation (or reactivation) of sets of “out of sequence” Po Plain-vergent thrusts that cut up the previous structures. As a consequence of this dynamics, the Mesozoic series has been re-exhumed and, together with its Cretaceous cover (Scabiazza Sandstones), overthrust the Pietra Parcellara Complex.

KEY WORDS: Piacenza Apennines, shear zone, paleogeography, geodynamics, out of sequence thrusts.

PAROLE CHIAVE: Appennino piacentino, zona di taglio, paleogeografia, geodinamica, sovrascorrimenti fuori sequenza.

1. INTRODUZIONE

Recentemente è stata segnalata (DALLAGIOVANNA et al., 1991, cum bibl.), nel “Complexo Caotico Indifferenziato” (C.C.I.) del margine dell’Appennino pavese-piacentino, la presenza di “spezzoni” di successioni triassico-giurassiche, ipotizzando che avessero potuto rappresentare il substrato di unità liguri esterne (Arenarie di Scabiazza).