HOLOCENE AND UPPER PLEISTOCENE SEDIMENTATION IN THE THYRRENIAN SEA: PRELIMINARY RESULTS FROM A STUDY IN PROGRESS

A.M. BORSETTI, M.L. COLALONGO & P. COLANTONI
Istituto di Geologia Marina - C.N.R. - Bologna - Italy

RESUME - Les données préliminaires sur le contenu faunistique de plus que 40 carottes prélevées dans la Mer Tyrrhénienne indiquent que la sédimentation peut être soit turbidique que hemipelagique et que souvent affluerent sur le fond des dépôts de la dernière période glaciare.

Preliminary data from about 40 cores collected in the Tyrrhenian Sea point out some different situations:

1) there are areas with large sediment accumulation and areas with low or no sedimentation and possiblity in erosion;
2) where sedimentation occurs it can be both ofhemipelagic type and turbiditic;
3) depositional characters are seen both to continue or to change from last glacial (Wurm III) to recent sediments in the same area.

Going from North to South, the following observations can be made:

- Into the little north-tyrrhenian basins the Holocene sedimentation is pelagic with only very rare fine turbidites. The sedimentation rate reaches it's minimum in the Cialdi Basin both in the Holocene and during the Wurm III. On Cialdi seamount there are some zones with active sedimentation, but the areas with erosion are prevailing as well as on Etruschi Seamounts and on Baronie Seamount where gaps are present also within the last glacial marine sediments.
- On the northern flank of the Orosei Canyon pelagic sedimentation occurs during both Holocene and Wurm, while on the southern flank the sedimentation changes from turbiditic during Wurm, to pelagic during Holocene.
- In the Sardinia basin the sedimentation is at present hemipelagic and with a very low depositional rate, while many turbidites affect the wurmian deposits.
- In the central part of the bathyal plain a pelagic sedimentation continued from Wurm to present, while going toward SW turbidites are encountered which are rare in the

Holocene deposits but frequent in the wurmian. Approaching the Sardinia channel, erosion exposes wurmian turbidites.

- The present pelagic sedimentation seems to cover the southern flank of the Secchi Seamount while wurmian deposits are exposed on it's northen slope.
- On mount Vavilov only Holocene sediments were collected. In the eastern part of the plain wurmian turbidites are exposed. On these, turbiditic pelagic sediments are being deposited at present West of Marsili Seamount.
- Near the base of the Sicilian slope at present there are turbiditic deposits while going a little North toward Mount Vavilov erosion is again in progress with exposed wurmian turbidites, mainly of vulcanoclastic origin.

The places with low or no Holocene sedimentation are mainly located in the southern part of the bathyal plain. In this area an erosion due to bottom currents can therefore be suggested, and especially near the Sardinia channel where a morphological hight between Tyrrhenian and the Mediterranean western basin may affect the bottom currents.

Discountinuous sedimentary sequences can be expected on the seamounts and mainly on their flanks, where slidings and slumpings easily occur, but the presence of cold (glacial) faunas in the top of many cores needs some considerations and explications:

- Sometimes the faunas can have been re-deposited by organogenous turbiditic flows, but often the sediments are clearly of wurmian age as demonstrated by their omogeneous faunal content.
- Sometimes the top of the core doesn't represent the actual sediment surface because using gravity corers the uppermost part of the sediments can often be lost (but not almost 100/120 cm = overage thikness of Olocene).

Many points still request an explication, but it's sufficient for the moment here to have defined that the sediment surface in the tyrrhenian sea does not contain omogeneous faunistical assemblages. A program is in progress for defining a more precise picture of the present and wurmian sedimentation.