The Centre Camille Jullian: Fifty Years of Maritime and Nautical Archaeology

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Communication presented by G. Boetto

In 1967, André Tchernia, assistant professor at the University of Provence (now Aix Marseille University) and member of the Institute of Mediterranean Archaeology, was nominated director of the French Ministry of Culture's newly created 'Direction des Recherches Archéologiques Sous-Marines'.

Tchernia, a world-renowned historian and archaeologist, and a specialist in Ancient Economy, was particularly switched on to developing underwater archaeology in France, conscious of the potential of the systematic study of shipwrecks for his specific field of research.
He also played a decisive role in the development of maritime archaeology, introducing the young archaeologist Patrice Pomey to the study of ship construction.

In 1968, so exactly fifty years ago, André Tchernia commenced excavation of a Roman-era wreck, Planier III (mid 1st century BCE) in Marseilles Bay.
The first full campaign in 1969 was essentially devoted to evaluating the potential of the site and the excavation of the cargo composed of amphorae from Brindisi and pigments from Campania.

The following campaigns in 1970-71 were mainly devoted to the hull study and were co-directed by Patrice Pomey. The wreck, beyond its scientific interest, played the role of a technical test site in view of excavating the Madrague de Giens wreck, the shipwreck that is generally considered as the founding project for French scientific underwater archaeology.

In 1970, André Tchernia assembled a team within the Institute of Mediterranean Archaeology, made up of underwater archaeologists and specialist technicians from the French National Centre for Scientific Research (CNRS): the architect Jean-Marie Gassend, Michel Rival, the photographers Antoine Chéné, Gérard Revelliac. Archaeologists Antoinette Hesnard and Patrice Pomey joined the team as associate researchers.

This was the first team of this type within either a French university or the CNRS. They became the maritime and nautical-archaeology team now attached to the Centre Camille Jullian, created in 1978 following on from the Institute of Mediterranean Archaeology.

So, from 1970, for the first time in France, photogrammetry was extensively used for the survey of the Planier III wreck, coupled with classical survey methods (plans and sections).

For the hull study, a special system for marking the wooden structures was also elaborated by P. Pomey (and this is the system that we still use today).
The systematic survey of the planking and of the means of assembling the timbers was also possible thanks to dismantling specific parts of the hull structure. This approach permitted the anatomical study of the ship structures and opened the way to further conceptual developments.

In 1972, this team of underwater archaeologists and technicians started the excavation of the Madrague de Giens wreck, located in the Hyères archipelago, east of Toulon, and dated to the 1st century BCE. The excavation lasted ten years and was directed by Tchernia and Pomey, assisted by Antoinette Hesnard.

The methods and techniques tested during the excavation of Planier III were developed and systematically used (magnetic survey, photogrammetry, hull sampling...).

This long-term project allowed the ship to be considered from a new, anatomical perspective. The smallest elements (pegs, nails, and treenails) and the biggest ones (the keel, the planking, the frame) were studied as part of a complex floating structure, along with their deep cross-correlations.

Thanks to the Madrague project, Pomey started to develop most of the theories that would spark debate in nautical archaeology in the following decades:

- research on shell first, skeleton first, and mixed construction practices;
- the notion of architectural types and the interdependence of shape and structure;
- the study of tonnage and sailing qualities;
- the use of traditional data (literary, iconography and ethnography) to help and support the type identification and interpretation …

The extent of the preserved wreck allowed a light to be thrown on both the study of the cargo, within the framework of research into maritime trade, and the analysis of the hull, in order to evaluate how these two aspects of the ship worked together, enabling the development of nautical archaeological studies.

As a consequence of this important excavation, Pomey's research matured, and between 1980 and 1985 he established a new system for analysing ancient ships, based on the concepts of the "Principle of construction" and the "Methods of construction", referring to the notions of "conception" and "realisation" of the ships.

But the Madrague de Giens project, although one of the major achievements of the Centre Camille Jullian, is only one of many.
In parallel, in 1973-1975, two of the team members, Jean-Marie Gassend and Michel Rival, participated in the excavation and study of the Roman wrecks of Port-Vendres 1 and the Bourse de Marseille.

In the wake of the Giens excavation, the CCJ team took on the excavation of the Roman wrecks of Grand Ribaud D (1983 – 1984, Hesnard) and Camarat 2 (1987 – 1989, Hesnard; 1993 – 1994, M.-B. Carre).
The Grand Ribaud D is one of the ships that, between the 1st c. BC and the 1st c. AD, was built specifically to transport bulk wine in large containers (*dolia*).

In 1998-1999, M-B Carre and S. Marlier, at that time a Masters student at the University of Provence now Aix Marseille University, were involved in the excavation of another shipwreck with *dolia* in Corsica (La Giraglia) and the study of this particular type of ships is still on-going thanks to the excavation of other shipwrecks and through specific experimental projects.

From 1991 to 2000, Pomey with Frédéric Guibal, dendrochronologist of the Mediterranean Institute of marine and terrestrial Biodiversity and Ecology in Aix-en-Provence, launched a programme of research into the dendrochronology of ancient wrecks, which led to the re-opening and analysis of about 30 ancient wrecks from along the French Mediterranean coast.

Some presentations will be specially dedicated to this topic and to some recent CCJ projects in dendrology, but we would like to remind you that this programme on dendrochronology of ancient Mediterranean shipwrecks had several objectives.

- First of all, identifying the different species of wood used in shipbuilding through systematic xylotomic analyses to try to understand the choices made by the shipwrights in relation to the different structural elements;
- studying the woodworking techniques to reconstruct the processes of transformation from tree to the finished structure;
- studying the origin of woods supplies, and eventually to establish dendrological correlations between different wrecks;
- and, finally, building up a reference database for the north western Mediterranean species.

In 1992 and 1993, the pre-construction archaeological excavations in Place Jules Verne, offered archaeologists, under the direction of A. Hesnard, the opportunity to excavate a large part of the ancient port of Marseilles.
On that occasion, seven ancient wrecks, of Greek and Roman dates, were discovered and excavated.

The study of these shipwrecks was entrusted to the nautical-archaeology team at the CCJ (Michel Rival, Robert Roman and directed by Pomey). All of these shipwrecks were analysed *in situ* and some of them were also recovered and conserved.
This exceptional collection is now on display in the Musée d'Histoire de Marseille that we will visit on Friday.

Although an experimental approach was applied to the Madrague de Giens for study and reconstruction, from the Jules Verne excavation onwards the use of experimental archaeology and scale models in the process of reconstruction of the ship shape and structure, and for the systems of assemblage, became systematic.

The excavation in Place Jules Verne was the starting point for another long-term project, leading in 2013 to the construction of *Gyptis,* a sailing replica of the ancient Greek archaic wreck Jules Verne 9, directed by Pomey and coordinated by Pierre Poveda, which confirmed the CCJ's specialization in the reconstruction of ancient wrecks.

As a result of studies on the wrecks of place Jules-Verne, new research directions could be discussed for the technical transition phenomena. First from 1996, on the transition between assembly techniques using ligatures to the system using mortise and tenon joints within the Greek tradition of sewn boats in Mediterranean; then from 2010, on the transition between 'shell construction' and 'skeleton construction'.

Continuing my doctoral project focused on the Roman shipwrecks of Fiumicino, and then in the frame of my research programme at the CNRS, and still within the framework of nautical archaeology within a port context (shipping, working boats, distribution and maintenance of port basins, circulation...), I supervised the excavation and study of several shipwrecks discovered between 2004 and 2015, in the Italian peninsula, in Naples and Isola Sacra near Ostia, the maritime harbour of Rome.

I also undertook the study of the collection of shipwrecks discovered in the years 1987-1988 in the ancient harbour of Toulon, which had been recovered and conserved but never systematically analysed.
Some of these wrecks, such as those in Napoli and Isola Sacra, were identified as being of the "Horeia" type with a transom bow.

Since 2007, in association with various Croatian partners, Irena Radic Rossi of the University of Zadar, Ida Koncani Uhac of the Archaeological Museum of Istria, Marko Uhac of the Ministry of Culture, and Krunoslav Zubcic of the Croatian Conservation Institute, I have co-directed archaeological research into the ancient wrecks of Dalmatia, Istria and on the river Kupa, including the sewn boat of Zambratija, dated to the late Bronze Age.

The results of the research in Zambratija, a joint project of the Archaeological Museum of Istria and the CCJ, are presented in a photographic exhibition within the Forum and the 2nd

edition of the catalogue, printed thanks to the sponsorship of Agisoft, has been distributed to all the participants of this conference.

Connections between the numerous shipwrecks from the Adriatic regions assembled using ligatures and other Mediterranean sewn-boat traditions (Greek, Iberian...) have recently led myself and Patrice to highlight the diversity of the Mediterranean sewn boats traditions, and an article will be appearing in the IJNA on this subject shortly.

We would also like to underline the personal involvement of Pomey, in the study of the Pharaonic maritime installations of the Red Sea and the study of the remains of the ships of Ayn Soukhna and Wadi El Jarf.

At the moment, the CCJ's team, myself along with Pierre Poveda, Vincent Dumas and the photographers Loïc Damelet and Lionel Roux, continues to work on the development of digital tools for nautical archaeology, through the systematic use of photogrammetry, 3D reconstructions and GIS.

Given the time allotted to this presentation, it was not possible to present the numerous research projects in Maritime and Nautical Archaeology in which the CCJ team has been involved in its first 50 years.

The study of the Mediterranean connectivity through the technological analysis of the ships and their cargo, the study of harbours installations, fishing activities, or the development of new interdisciplinary approaches opened up to geosciences and to other physical and environmental sciences, still constitute some of the core achievements of our centre in Maritime and Nautical Archaeology.

A new graduate programme has also seen the day, the Master of Maritime and Coastal Archaeology-MoMarch of the Foundation Amidex of Aix Marseille University is the result of a fruitful synergy with our colleagues of the DRASSM.
Our master students are here helping in the organisation of the conference, together with some of the alumni, the new wave of young researchers, including Alba Ferreira, Anton Divic, and Alex Sabastia, that will carry the heritage of the CCJ forward with new research projects.
We hope that this fifteenth edition of the ISBSA, that we have the honour to organise, will bring a fair wind (and following seas) to us all and to our centre in view of new and exciting scientific projects.

Now, it's time to conclude. But not before addressing our thanks to all the institutions and partners that have enabled this fifteenth edition to be organised:

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Thank you for your attention