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THE MÈDES 6 SHIPWRECK (FRANCE, 1ST CENT. BC), AN EXAMPLE OF "INTERNAL STITCHING" IN THE NORTHWESTERN MEDITERRANEAN

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The *Mèdes 6* shipwreck was found in 2010 after two years of survey by divers from the Iero Diving Center under the supervision of J.-Y. Formentin, 44 meters deep, 5,5 miles off the coast of Hyères (Var, Provence, France), within the Port-Cros national park. The three years project (2013-2015), conducted by the Iero Diving Center, has been supported by the Department of Underwater Archaeology (DRASSM) of the French Ministry of Culture, the Centre Camille Jullian, the Institut Méditerranéen de Biodiversité et d'Ecologie marine et continentale (Aix-Marseille University, UMR 7263 CNRS-IRD-UAPV, IMBE) and the Port-Cros national park.

CARGO, CERAMICS

The cargo is composed by a total of 65 Dressel 1C and a single Lamboglia 2 amphoras in a bad state of preservation. At the extremity of the wreck, the concentration of a few pieces of ceramics (Fig. 3) can be interpreted as inboard furniture according to the small number of fragments and to their burnt surfaces.

The cargo and the ceramics date the sinking back to the end of the 2nd, beginning of the 1st century BC.

REMAINS OF THE HULL

Due to the rocky bottom, the wooden remains are in a bad state of preservation. The excavated part of the hull is 4.5 m long and 2.5 m wide. A part of the keel (the stern or stem post), 4 fragments of strakes and 14 pieces of frames are preserved (Fig. 1). The post is 1.8 m long, 13.5 cm high and 11.5 cm wide. The piece is rabbeted. The two first strakes are preserved on both sides of the hull and are 14 cm wide and 2.5 cm thick. The planking is assembled by pegged tenons spaced 16 cm on average. The planking is also attached to the post by pegged tenons and reinforced by nails at its southern extremity.

The floor-timbers are alternated with half-frames, except for the southern extremity where two floor-timbers are attested (M100 and M101). The frame spacing measures from 16.5 cm to 33.5 cm. The V-shaped floor-timbers are 6-7 cm wide and range from 27 cm high in the center to 8 cm high at the extremities. The half-frames are on average 6.5 cm high and 5.5 cm wide.

The frames are connected to the planks in three different ways: nails, treenails and internal stitching (Fig. 4). The internal stitching is done by fibers plaited carefully to produce a lash driven through the frames and locked by treenails (Fig. 2).

The wood analysis shows that the post was made out of Aleppo Pine (*Pinus halepensis*) while the planks and the frames were made out of different type of pines: Aleppo pine, Scots pine (*Pinus t. sylvestris*) and Corsican pine (*Pinus nigra subsp. laricio*). The treenails are made out of silver fir (*Abies alba*).

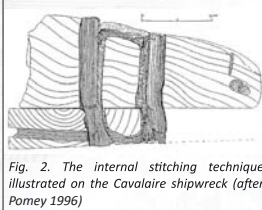


Fig. 2. The internal stitching technique illustrated on the *Covallaire* shipwreck (after Pomey 1996)



Fig. 3. Inboard ceramics (© L. Damalet, CNRS/CCI)



Fig. 4. The top of the frame M100 showing internal stitching (left), treenailing (yellow pin) and nailing (right) (© U. Munoz, Iero)

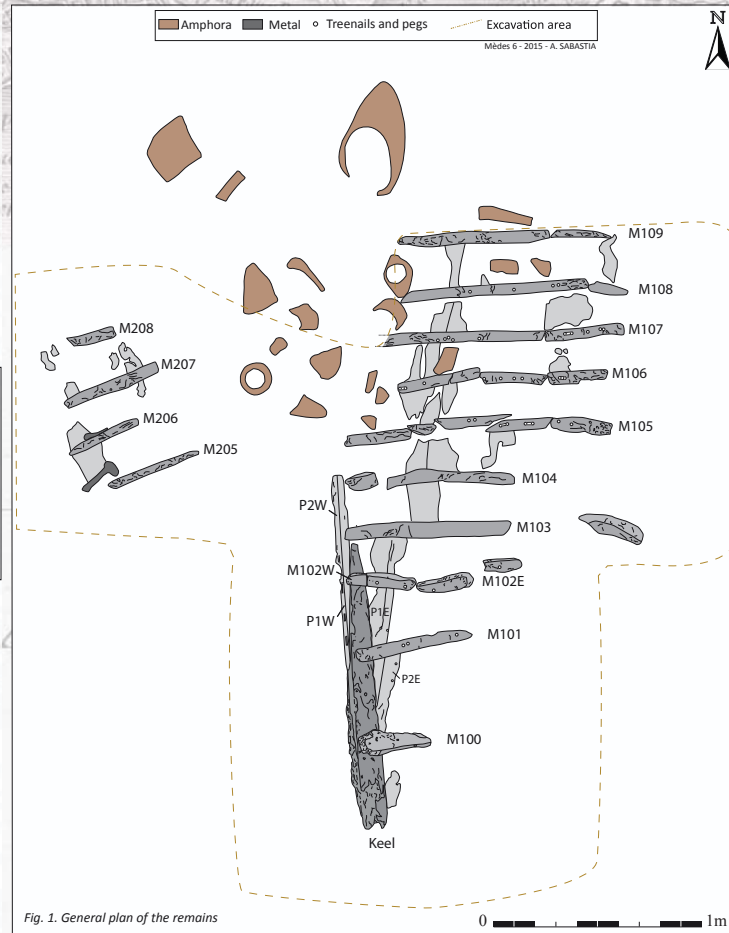
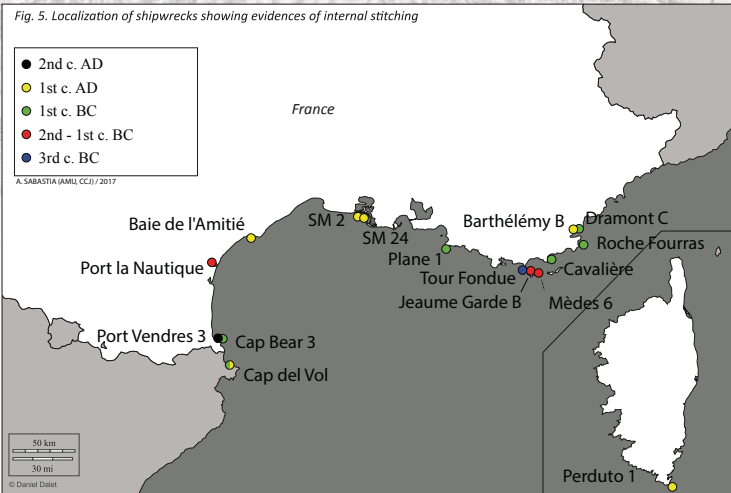


Fig. 1. General plan of the remains

Fig. 5. Localization of shipwrecks showing evidences of internal stitching



FIRSTS RESULTS AND ARCHAEOLOGICAL COMPARISONS

The internal stitching technique links *Mèdes 6* to fifteen vessels sunken along the coasts of the northwestern Mediterranean and dated from the 3rd c. BC to the 2nd c. AD (Fig. 5) (Pomey 2002 ; Marlier 2005 ; Wicha 2005). This group includes different types of vessels, from small sailing boats like *Mèdes 6*, to bigger sea-riverine sailing ships such as *SM24*, bringing iron bars to the Rhône delta (Long *et al.* 2009).

The origin of this technical tradition remains unknown, although it has been identified on the 6th c. BC shipwreck *Jules Verne 9* (Pomey 1995) for the assembly of a futtock, as well as on one piece belonging to the upper structures of the 3rd c. B.C. Phoenician shipwreck of Marsala (Frost 1981).

According to the size of the cargo and to the general dimensions of the architectural pieces, *Mèdes 6* corresponds to a small sailing vessel, 10-12 meters long, used for a regional navigation and possibly of local construction.

Mèdes 6 brings a new attestation of the internal stitching for the assembly between frames and planking on a small sailing vessel, showing its frequent use in the region during the Roman period.

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