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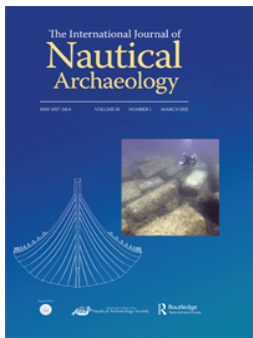
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## L'épave EP1-Épagnette (Somme): un bateau de navigation fluviale du milieu du XVIIIe siècle et son espace de navigation, Revue archéologique de Picardie, numéro spécial 35

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## BOOK REVIEW

**L'épave EP1-Épagnette (Somme): un bateau de navigation fluviale du milieu du XVIII<sup>e</sup> siècle et son espace de navigation, *Revue archéologique de Picardie*, numéro spécial 35**, edited by Éric Rieth with 14 Contributors, 2020, 232 pp., 246 illustrations, some colour, 6 large plans, €35 (sbk), ISSN 1272-6117

France, thanks to its extensive network of waterways, is characterized by an extreme diversity of fluvial and fluvio-maritime boats and ships. One only has to consult François Beaudouin's *Bateaux des fleuves de France* (Douarnenez, 1985) to see the extraordinary range of types of inland vessels, each with a strong identity in terms of structure, shape, propulsion and steering systems. These vessels are particularly well adapted to the very different sailing conditions created by the physical and hydrological characteristics of their locality. They also reflect traditional technical cultures that are often characterized by a strong conservatism, the mix of boat-building characteristics being more accentuated in estuarine areas open to maritime influences.

However, inland navigation in France remains a largely unexplored field, particularly from the point of view of the history of techniques. From the medieval period onwards, written sources refer mainly to navigation, particularly to conflicts between users. The texts can sometimes provide data on construction and repair costs, but only for large vessels belonging to secular or ecclesiastical properties. Furthermore, despite the development of treatises for maritime shipbuilding from the end of the 17th century, inland navigation is characterized by the absence of technical treatises, as it remains rooted in a traditional culture where apprenticeship is practised without the intermediary of writing or drawing within a closed artisanal context (family or corporation). In this context, the contribution of archaeology is important and Éric Rieth's researches in particular.

Since 2005 he has been conducting underwater research in the north-west of France, in the rivers Canche and Somme. Only one year after the completion of a research programme in the Somme River which included a first evaluation campaign (2011) and eight excavation campaigns (2012–2019) we had the pleasure of reading the results of the study of the wreck of a mid-18th-century river-boat, EP1-Épagnette. This collaborative work aims to be much more than a monograph devoted to the description and interpretation of the hull and cargo remains of a single ship-find. It aims to reconstruct the entire history of the EP1-Épagnette ship within a natural and man-made river landscape.

The publication of this wreck comes a few years after the monograph dedicated to the Beutin wreck (EP1-Cache) from the first half of the 15th century, and should probably be followed by the publication of the Brexent-Enocq wreck (EP2-Canche) from the mid-17th century, also discovered in the River Canche. The Beutin 14-m-long vessel was intended for coastal and river navigation between the Bay of the Somme to the south and the Canche Estuary to the north (see Westerdahl, 2015). Although it predates the Épagnette wreck by almost three centuries, Beutin constitutes for Éric Rieth an important comparative structural model at the regional level and, as such, it is mentioned several times in this work dedicated to the Épagnette wreck.

The monograph consists of 25 contributions organized in four parts of unequal length, a bibliography, a glossary of technical terms, seven appendices and three brief summaries in French, English and German. After an introduction on the regional context of nautical archaeology, the first part (pp. 9–30) presents the history and circumstances of the discovery, its location and the scientific choices on which to base the research programme, which had to submit to difficult underwater working conditions. The second part (pp. 31–43) is dedicated to the history of the hamlet of Épagnette, located between Abeville and Pont-Rémy, and the landscape surrounding it. The latter is studied in the long term, in its geomorphological evolution and according to a multiscale approach ranging from the estuary, through the river-valley, to the meander. Water is here the structuring element of the landscape according to Virginie Serna's beautiful notion of the *territoire de l'Eau*.

The third part (pp. 45–175) is the most developed and is devoted to the study of the wreck in its multiple aspects. It opens with two contributions that provide a chronological framework for the wreckage: the dendrometric study and the thermoluminescence dating of the tile cargo. These two very technical chapters could very well have formed a separate part to balance the plan of the book. Indeed, the first study, beyond offering a precise dating for the construction of the ship (winter 1747), offers much more information on the types of wood used, the location of the pieces in the different parts of the trees and the selective choice of species in relation to the various structural components. The second dating method applied to the Épagnette wreck (a first for a submerged cargo) revealed a time lag between the manufacture of the various types of roof-tiles transported. The flat roof-tiles would have been stored for some ten years before being loaded with the other two types of tiles onto the ship between 1750 and 1775.

The process of formation of the shipwreck is also taken into account and three different scenarios are put forward in the light of the conformation of the riverbed and its hydrology. Other 18th-century sources from regional archives, in particular a map and a manuscript, are also used to put forward hypotheses as to the origin of the wreck.

The study of the structural remains preserved over 13 m in length and 2 m maximum breadth is very detailed. It was carried out *in situ* after marking the various components and was accompanied by manual surveys in plan and section. However, it is thanks to the numerous samples of the hull, components selected for their structural representativeness, that the characteristics of this boat could be studied in detail. Admittedly these samples led to a break in the integrity of the wreck, but they were essential for the study to go beyond a simple description of the structural components to undertake an in-depth analysis oriented towards construction practices. This study also benefited greatly from the implementation of a reconstruction of the ship, accompanied by hydrostatic calculations. The third part ends with the study of the tile cargo and its organization, and the peat *briquettes*, probably used for cooking. Finally, the fourth and last part (pp. 177–189) concerns the technical methods of navigation on the Somme River and the techno-economic structure of its inland navigation in the 18th century.

At the end of the reading of this work, a new structural style typical of the Somme River could be characterized. This boat, 14.75 m long, 3.6 m wide and 0.8 m high, has an average load of around 13 tons for a very shallow draught (46 cm) compatible with the characteristics of the Somme River in the 18th century. This boat is unique in that it has an integrated bottom made up of oak strakes carefully assembled through longitudinal rabbets blocked by beech pegs, and without any temporary fixing to the timbers in a shipyard; bow and stern timbers rabbeted to accommodate the strakes of the sides; clinker-built sides in oak, fastened with iron rivets; differential watertightness systems (luting and possibly caulking) with the use of heterogeneous materials (vegetable twigs, horsehair); three types of ribs (L-shaped curves and floor-timbers with differently arranged futtocks) fixed to the bottom and sides with mostly oak trenails and presenting a very wide spacing; a mast-step positioned near the main beam accommodating the foot of a mast fitted with a square sail and used as an alternative to towing; an axial rudder.

Éric Rieth puts forward some very interesting hypotheses and conclusions concerning the particular technique for the longitudinal assembly of the bottom strakes and its watertightness. Firstly, this assembly seems to be related to the difficult and restrictive conditions of

navigation on the Somme River (reduced depth in the navigation channel and the existence of numerous shoals causing frequent grounding), as contemporary written sources confirm. Secondly, this type of assembly, which is well attested in carpentry and cabinet-making, allows the boatyard to be placed in a rural techno-economic environment not using the construction methods of the region's urban shipyards. Finally, since it is a very complex assembly and presupposes a mastery of techniques, the Épagnette boat cannot be an 'innovation' or a technical 'improvisation' from an isolated boatyard but evidence of a mature regional boatbuilding tradition.

Of particular interest is the section devoted to the examination of coefficients and various dimensional and weight ratios. For example, in the Épagnette boat, the proportional ratios between the weights of the three constituent parts (bottom, sides and frame) show that the bottom and sides make up more than 70% of the total weight of the boat, while the frame represents a very small 22%. These values reveal the central role of the bottom and sides in the construction process and the secondary function of the frames, which are primarily intended to reinforce the hull. On the other hand, comparison between the Épagnette boat and the Beutin boat clearly shows the difference between a 'light' structure adapted to a protected working space for the former, and a 'heavy' structure, which exemplifies the adaptation of a river-boat to the constraints of a marine environment.

The question of construction principles and methods is also of particular interest although difficult to study. This section might have required the introduction of the notion of mixed construction principles and methods as the boat is said to be bottom-based, while the sides are built according to a longitudinal shell-oriented principle and shell-first processes.

In conclusion, although the plan, the division and the format may sometimes discourage some readers, this final report of the excavation of the Épagnette wreck is a very rich work which raises several interesting questions. It certainly deserves to be included in the libraries of archaeologists and historians interested in river navigation.

## Reference

Westerdahl, C. (2015). L'Épave de la Première Moitié du XVe Siècle de la Canche à Beutin (Pas de Calais). *International Journal of Nautical Archaeology*, 44(1), 229–230.

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