Préhistoire Européenne, volumes 16 - 17 / 2000 - 2001, p. 291 à 293.

MEGALITHIC BUILDINGS AND SEA-GOING SHIPS OF THE NEOLITHIC AGE

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Megalithic monuments cluster along the Atlantic fringes of western Europe. Their construction was thought to be triggered by the high cultures on and behind the eastern Mediterranean (Childe 1958), until C14 analyses falsified this assumption (Renfrew 1973). When this happened, the whole idea of diffusionist spreading of cultures fell into discredit. Several hypotheses arose to explain the existence of megalith cultures as independent developments of Neolithic farmers at a number of sites widely apart from each other (Renfrew 1973:160, Renfrew & Bahn 1996:467).

But in all human history *some* cultures and ideas *did* spread over long distances in a diffusionist manner (Wrigley 1989: 747); examples are the Latin and the English languages and the Christian religion. Hence it appears still sensible and legitimate to assume a common point of origin of the megalithic cultures along Europe's Atlantic coasts - and that from here the new ideas were disseminated by sea.

The origin might have been on the peninsula of Brittany, on the western outskirts of today's France; here around 4500 BC the idea of building megalithic tombs arose. The first passage graves were constructed in northwest Brittany (Patton 1993:33 ff.). Somewhat later, passage graves replaced giant menhirs in southern Brittany, with some of the dismantled menhirs, or parts of them, serving as capstones and other structural elements of the new tombs (Le Roux 1985).

Until c.3500 BC, megalithic structures were erected also in Cornwall, Wales, North Ireland, Scotland, the Orkney and Shetland Islands, Denmark, southern Sweden, northern Germany, northern Spain and Portugal (Mercer 1992:49, Burenhult 1993:79, Sherratt 1996:191). By 2500 BC, such structures had spread also over The Netherlands, Belgium, the whole of Ireland, southern France, Spain and North Africa. After that, the megalith epoch ended within a rather short time.

Sites and directions of this slow but steady expansion are compatible with a naval propagation along routes that may have had long been established. Already in the Neolithic, rare, highly valued goods were traded over long distances. For instance, high quality flint and polished axes were shipped over hundreds of kilometers in Brittany, in England and in Denmark (Edmonds 1993:69, Sherratt 1996:191, Fischer 1997:279). Exchange of other valuable goods like salt, furs, amber, pigments, resins and incense is known from southeast Europe (Sheratt 1996:191); it cannot be regarded as impossible in northwest Europe, source of most of the amber. The existence of sea-going boats in Atlantic waters in the 5th, at most the early 4th millennium BC, is very likely.

Recently, early long-range connections by sea-travel between Brittany, Iberia, Ireland and Scandinavia have been postulated on the basis of supposed 'blueprints' of passage graves in the form of stone carvings (Rault 1997:5 ff.); a Mesolithic, rather than Neolithic, origin of the earliest monuments is suggested.

Stones are more resilient than organic materials. It is little surprising therefore that up to the present day no remnants of ships dating to megalithic times have been detected; in itself this is no argument against Neolithic seafaring. Maybe we did not yet ask the right questions? Maybe we did not search at the right places? Maybe we overlooked or reinterpreted relevant findings?

"L'existence de relations maritimes, et même d'une marine mégalithique, est indiscutable" (Briard 1995:198). Potentially sea-going ships in Neolithic northwest Europe could have been plank-boats, but more likely hide-boats, for these the technical prerequisites existed and their stability should have been acceptable (McGrail 1997:208). Hide-boats would have had a maximal length of about twelve meters; they would have been limited to Force 5 winds <20 knots), but with a good chance to ride out unforeseen heavier weather (McGrail 1998:260). Though less likely, also sea-going logboats with two boats paired, or fitted with stabilizers, outriggers and wash strakes may have been built in the European Neolithic (McGrail 1997:192).

Usually the boats would have been under oars, because in tidal waters and close-to-shore currents these were less at risk than sailing boats in untoward combinations of wind and wave action (Gould 2000:66). It is not clear whether early use of sails for longer voyages over open sea can be precluded (Müller-Karpe 1982:13, Stölting 1994:54).

Are there any regions where a search for Neolithic vessels would not be doomed for failure from the beginning? It seems that such regions must fulfil four conditions,

1. positioned above the current coastlines (no exposure to the destructive breakers of the sea),
2. wetland sites where organic materials are water-logged,
3. evidence of settlements during megalithic times (presence of monuments),
4. suitable landing/mooring places during megalithic times.

In the North Sea, the sea level was about 7 meters by 4500 BC, and about 3 meters by 2500 BC, lower than today (Köhn 1991:40; McGrail 1998:259). Therefore many early settlement sites are now submerged. However, isostatic rise of parts of Scandinavia and of Scotland has outgrown eustatic transgression. Also at some other Atlantic coasts, e.g. in western Belgium and in the Bay of Biscay, the sea has receded.

After a careful survey of the available knowledge of Neolithic coastlines in western Europe, one can prepare a list of areas where residues of ancient sea-going ships had a chance to survive, i.e. areas conforming with the four conditions listed above, these are :

Ireland	Co. Louth	Boyne Valley
Scotland	Orkney Islands	
France	Britanny	Grande Brière
France	Poitou	Marais Poitevin
Belgium	West Vlaanderen	Avekapelle/Spermalie Inlets
Netherland	Drenthe	Osterwolde/Boorne
Germany	Lower Saxony	Ancient Hedeln Inlet
Germany	Schleswig-Holstein	Sylt, Föhr, Amrum
Denmark	Jutland	Filsö/Sövingsund/Nissum Fjord
Denmark	Jutland	Limfjord plains
Denmark	Jutland	Fjords on the Baltic
Denmark	Sealand	Lammerfjord, Roskilde Fjord
Sweden	Scania	
Norway	Oestland	

This selection requires some explanatory comments. In Ireland, the Boyne Valley had long been inhabited when it became a ritual center with the extraordinary passage graves of Newgrange, Knowth and Dowth at its very heart (Cooney 2000:29). Isostatic rise of the Scottish Orkneys may have turned a number of bays and channels into bogs. Both the Marais Poitevin and the Grande Brière are swampy areas in Atlantic France that have silted up in mediaeval times and are fringed with megalithic buildings (Droste 1999:122). In western Belgium, Avekapelle and Spermalie were tidal inlets which for millennia cut through a tidal barrier, and from which the sea now has receded a few miles (Köhn 1991: 43). Seagates existed also in the coastal barriers of The Netherlands; Middle Neolithic findings exist along the valleys of the Drenthe plateau (Fokkens 1998: 5 1) where the hunebedden seem to have been built in a 'colonization phase' beginning at c. 3400 BC and lasting only for 2-3 generations (Fokkens 1998:99, 169). In northern Germany, the Altenwalde moraine separates the Elbe and Weser estuaries. Immediately east of this moraine, to the west of the Elbe river, existed the ancient Hadeln Main Inlet since c. 4900 BC (Köhn 1991:105, 125). This still swampy area became frequently flooded well into the 19th century. Numerous megalithic graves are found on the moraine and on several upland islands east and west of the former inlet (Schön 1995:17, Fokkens 1998:98). North of the Nissum Fjord in Denmark, the Jutland peninsula keeps rising isostatically, but south of this fjord, where the sea level has little changed, several inlets and bays became closed by sand barriers and have silted up thereafter (Köhn 1991:129). In contrast the deep tunnel valleys on the Baltic coast of Jutland may have served as natural harbors since Mesolithic times. They provide ideal links of maritime and land transport, and today at the very end of each of them a town is found (Schou 1976:9). Neolithic settlements on these fjords would have existed 'upstream' of the present towns. Moderate isostatic rise let Lammefjord and Roskildefjord in Sealand silt up. In Swedish Scania and Norwegian Oestland isostatic rise is by far more prominent. Despite many stone incisions with pictures of skin boats that have been detected in these regions (Östmo 1988, 1990), only bogs formed of ancient bays could have retained residues of such boats.

Even the smallest of above areas is by far too big for somebody just to go ahead and start digging. Sophisticated remote sensing techniques will be required, but even then success cannot be taken for granted. Important hints may be obtained by scrutinizing reports of earlier findings, some of which may have been misinterpreted.

Which materials can be expected to have existed on ancient boats? Wood, ropes, leather, tar, resins, tanning agents, flint, ceramics, copper (?), amber, shells, pigments, furs, stones, food, charcoal, bones.

Many of these will not have survived the millenia - but perhaps, here or there, one or the other combination of items, to justify the assumption that this was a Neolithic, sea-going vessel...

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