

10 St Mary's Hill and 9 St Mary's Street suggest that these two houses may have consisted of two parallel ranges with their gables facing the street.

The social standing of 14 St Paul's Street is indicated by the size of the hall, which is amongst the largest in Stamford, and by the high standard of architectural ornamentation in both the early and late 13th-century phases. This compares favourably with contemporary work in churches in the area, and the same judgement applies to 17 St George's Square. That the house probably had few rooms accords with other evidence for 13th-century urban houses. Size rather than number of compartments was the main criterion of social standing, together with elaboration of ornament. Contemporary descriptions of houses before the mid-14th century rarely mention more than a hall, a chamber, a kitchen and service rooms. The multiplication of rooms, especially of chambers, seems to have been a later phenomenon.

Aisled halls do not appear to have been very common in towns, where space was often at a premium. Several examples are known, some with only one aisle at the back, as at 3-4 West Street, New Romney;<sup>47</sup> the increasing evidence for aisled halls suggests that they may have been less uncommon than has hitherto been supposed. The roof of 14 St Paul's Street is of high quality, neatly made with well-squared straight timbers, unlike the rough carpentry of the roof above the hall of 12 St Paul's Street. In design it compares with other contemporary roofs with open notched lap joints and straight braces; the struts above the collars are a less common feature.

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#### NOTES

<sup>41</sup> Royal Commission on Historical Monuments, *The Town of Stamford* (London, 1977), monument (377).

<sup>42</sup> A. Rogers, *Medieval Buildings of Stamford* (Stamford Survey Group Report no. 1, 1970), 40 and authorities there cited. The writers are indebted to the Stamford Survey Group for drawing attention to the new evidence, and to Mr Richard Bradshaw, the owner, for his willing co-operation.

<sup>43</sup> R.C.H.M., op. cit. note 41, Pls. 62, 63.

<sup>44</sup> *Ibid.*, lxxxvii.

<sup>45</sup> For the following buildings, see *ibid.*: 53 High Street St Martins, mon. (232); 17 St George's Square, mon. (297); 10 St Mary's Hill, mon. (336); 13 St Mary's Hill, mon. (338); 9 St Mary's Street, mon. (347); 7 St Paul's Street, mon. (372); 12 St Paul's Street, mon. (375); 16-17 St Paul's Street, mon. (379).

<sup>46</sup> *Ibid.*, Pl. 61.

<sup>47</sup> *Archaeol. Cantiana*, LXXXVIII (1973), 124. The list of aisled houses in *Vernacular Architecture*, 6 (1975), 21-26, omits those with masonry arcades.

#### MEDIEVAL LOGBOATS

It has been assumed in the past — and possibly still is assumed — that the many logboats (dugout canoes) found in Britain are prehistoric. Phillips, for example, claimed that the extreme simplicity of the North Stoke logboat indicated that it was produced by an 'early or rude condition of man', that is, by 'Ancient Britons'.<sup>48</sup> Phillips also believed that 'it was adverse to reason' to suppose that logboats were built after the introduction of iron tools which could be used to fashion planks. Even as recently as the 1950s, Holmes and Hayward<sup>49</sup> argued that a Saxon scramasax found in the same gravel pit as the Waltham Cross logboat, 'was clearly of later date' than the boat. This attitude may be contrasted with Wilson's conclusion<sup>50</sup> that many logboats must be of post-Roman date.

There is much documentary evidence for the use of logboats in continental Europe until this century.<sup>51</sup> Lucas<sup>52</sup> has summarized the literary evidence for their use in Ireland until the late 17th century, and he believes it probable that they were used well into the 18th century. Joass,<sup>53</sup> quoting a letter dated 22 May 1798, has argued that logboats

(*ammir*) were in use in about 1760 in Ross-shire, Scotland. In England and Wales the latest unambiguous reference appears to be by John Leland<sup>54</sup> who noted logboats in use on Llyn Llangorse (formerly Llyn Savallan), Breconshire, in the early 16th century. It is true that Cowper quoted a remark by a local resident that the logboat found at Whin-fell Tarn, Westmorland, had been in use 40 or 50 years previously,<sup>55</sup> but this unsubstantiated report may not be entirely trustworthy. Cowper's other argument for late use, based on an early 18th-century manuscript, was rightly criticized by Fox.<sup>56</sup>

Logboats in Britain have been dated by radiocarbon assay since about 1960, and of the twelve dates available by 1974, four were of the 3rd to the 11th centuries A.D. (see Hardham 2, Amberley 3, Llyn Llangorse, and Warrington 11 in the Appendix). In addition, the Kentmere boat,<sup>57</sup> an extended logboat, had been dated to the mid-14th century.

During a survey of the logboats of England and Wales by McGrail in 1972-75,<sup>58</sup> samples of timber were taken from 40 boats which satisfied the following criteria:

- (i) any conservation treatment must be known, and the method of removal must be feasible
- (ii) timber from the outer growth rings of the parent log must have survived, so that samples could be taken from there
- (iii) the boat must be sufficiently well documented to make its dating significant in further studies.

In a few cases conservation had been recorded in the published report, but generally tracing the conservation treatment was difficult, as museum records proved to be far from comprehensive. Some useful information survived in Birmingham Museum, however, and details of Cyril Fox's recommended conservation treatment were traced. The chemicals included raw linseed oil, paraffin wax, Berlin or Brunswick Black, and powdered resin. The linseed oil was to be allowed to penetrate the timber in so far as it could; the other three substances were to be used for cosmetic treatment. Fox's influence was traced to several museums holding logboats in the 1920s and 1930s.

Samples taken from these logboats were examined for contaminants by R. Switsur in Cambridge. Technical details will be published elsewhere; it is sufficient here to say that it proved possible with much effort using both physical and chemical methods to remove, eliminate or reduce to insignificant proportions the various substances that were contaminating the timber, and which, had they not have been so removed, would have led to falsification of the radiocarbon dates. Any contamination by relatively younger contaminants would have had a disproportionate effect on the measurements.

Once the wood had been purified, the pure cellulose fraction was extracted from it and used to prepare a pure sample of carbon dioxide containing all the radiocarbon from the logboat sample. The radioactivity from this was measured by the precise technique of gas proportional counting and, by comparison with measurements of international standards, was expressed as a conventional radiocarbon date, based on the Libby half-life for radiocarbon. The rather small uncertainties in the counting statistics of the radioactivity yielded the uncertainties in the stated date.

Nine dates are now available from the work being undertaken in Cambridge, and all have proved to be medieval. These are tabulated in the Appendix, together with the medieval logboat dates available before the present survey began. They are all expressed as conventional radiocarbon dates and have not been calibrated. The various dendro-chronological calibration curves indicate that the dates are probably not removed from historical dates by more than half a century. The dates range from the 3rd century to the 14th, which is directly comparable with recent radiocarbon dates from logboats in Continental Europe, where several finds have been dated from the 2nd century to the 14th.<sup>59</sup> An analysis of the dates of the Continental logboats so far available shows that 16 out of 28 are later than the 1st century A.D. In Britain this proportion is 14 out of 22.

## RADIOCARBON DATES LATER THAN 1ST CENTURY A.D. FOR LOGBOATS FROM ENGLAND AND WALES

Laboratory Reference No.	Reference	Logboat, and material used for dating	bp	ad	±
Q-827	McGrail and Switsur <sup>60</sup>	Hardham 2.	1655	295	50
Q-828	McGrail and Switsur	Amberley 3.	1310	640	70
Q-857	McGrail and Switsur	Llyn Llangorse.	1136	814	60
Q-1392	present note	Howley (Warrington 3), outer section of parent log ( <i>Quercus</i> sp.).	1075	875	60
Q-1394	present note	Arpley (Warrington 5), outer section of parent log ( <i>Quercus</i> sp.).	992	958	65
Birm-269	<i>Radiocarbon</i> , 15 (1973), 9	Gate Warth (Warrington 11). ( <i>Ulmus</i> sp.).	950	1000	90
Q-1391	present note	Walton Lock (Warrington 2), outer section of parent log ( <i>Quercus</i> sp.).	930	1020	50
Q-1396	present note	Barton, outer section of parent log ( <i>Quercus</i> sp.).	920	1030	65
Q-1393	present note	Fairclough (Warrington 4), outer section of parent log ( <i>Quercus</i> sp.).	878	1072	60
Q-1456	present note	Irlam, outer section of parent log ( <i>Quercus</i> sp.).	865	1085	40
Q-1395	present note	Walton Arches (Warrington 7), outer section of parent log ( <i>Quercus</i> sp.).	860	1090	60
Q-1390	present note	Arpley Meadow (Warrington 1), outer section of parent log ( <i>Quercus</i> sp.).	760	1190	60
D-71	<i>Radiocarbon</i> , 3 (1961), 37	Kentmere ( <i>Quercus</i> sp.). This is an extended logboat.	650	1300	120
Q-1245	present note	Giggleswick Tarn, outer section of parent log ( <i>Fraxinus</i> sp.).	615	1335	40

- NOTES TO THE APPENDIX:
1. Convention used: bp = before present (A.D. 1950)  
ad = date in radiocarbon years
  2. The dates are not calibrated
  3. McGrail and Switsur<sup>60</sup> have listed prehistoric dates for English and Welsh logboats, and discussed the problems in interpreting published radiocarbon dates.

## SEAN McGRAIL and ROY SWITSUR

## NOTES

<sup>48</sup> T. Phillips, 'Account of the discovery of an ancient canoe at North Stoke in Sussex', *Archaeologia*, 26 (1935), 257-64. See page 262.

<sup>49</sup> J. Hayward and J. F. Holmes, 'Waltham Cross dugout canoe and its implications', *Trans. E. Hertfordshire Archaeol. Soc.*, 13 (ii) (1952-54), 138-51.

<sup>50</sup> D. M. Wilson, 'Medieval boat from Kentmere, Westmorland', *Medieval Archaeol.*, x (1966), 81-88. See page 85.

<sup>51</sup> W. Rudolph, *Handbuch der Volkstümlichen Boote im Östlichen Niederdeutschland* (Berlin, 1966), 16; G. Salemke, 'Der einbaum vom Mondsee, Österreich', *Das Logbuch*, 8 (1972), 4-8. See page 5; E. Nikkilä, 'En Satakundensisk Åsping ock dess Eurasiska Mousvarigheter', *Folk-Liv*, 11 (1947), 33-46. See page 33; A. Eskeröd, 'Early Nordic Arctic boats', *Arctica* (1956), 57-87. See page 63; P. Traeger, 'Schiffsfahrzeuge in Albanien u. Macedonien', *Corr-blatt der deutsch G. F. Anthropol.*, 35 (1904), 25-38; H. Rasmussen, 'Hasselø-egen', *Kuml* (1953), 15-48.

<sup>52</sup> A. T. Lucas, 'Dugout canoes in Ireland', *Varbergs Museum Årsbok* (1963), 57-68. See page 65.

<sup>53</sup> J. M. Joass, 'Note on the curach and ammir in Ross-shire', *Proc. Soc. Antiq. Scotland*, xv (1881), 179-80.

<sup>54</sup> J. Leland, *Itinerary in Wales*, ed. L. Toulmin-Smith (London, 1906), originally published c.1540. See page 107.

<sup>55</sup> H. S. Cowper, 'Notes on recent discoveries in Whitefell Tarn, Westmorland', *Proc. Soc. Antiq.*, xii (1888), 224-27.

<sup>56</sup> C. Fox, 'Dugout Canoe from South Wales', *Antiq. J.*, vi (1926), 121-51. See page 128.

<sup>57</sup> Wilson, op. cit. note 50.

<sup>58</sup> S. McGrail, *Logboats of England and Wales* (Oxford, B.A.R. no. 51, 1978; National Maritime Museum Archaeology Series no. 3).

<sup>59</sup> S. McGrail, 'Dating ancient boats', J. M. Fletcher (ed.), *Dendrochronology in Europe* (Oxford, B.A.R. International Series 51, 1978; National Maritime Museum Archaeology Series no. 4).

<sup>60</sup> S. McGrail and R. Switsur, 'Early British boats and their chronology', *International J. Nautical Archaeol.*, iv (1975), 191-200. For Hardham 2, see page 196.