

<sup>7</sup> I owe this suggestion to W. J. Rodwell.

<sup>8</sup> The form of the rim found by F. Henry to define a second, 7th-century group of post-Roman enamelled hanging-bowls: *J. Royal Soc. Antiq. Ireland*, LXVI (1936), 218.

<sup>9</sup> For the occurrence of *millefiori* work in the more developed groups of hanging-bowls, see E. Fowler's chart: 'Hanging Bowls', J. M. Coles and D. D. A. Simpson (eds.), *Studies in Ancient Europe* (Leicester, 1968), 297.

<sup>10</sup> H. M. Taylor, *Anglo-Saxon Architecture III* (Cambridge, 1978), Fig. 723 (Canterbury St Pancras), Fig. 728 (Reculver; Rochester).

<sup>11</sup> *Antiq. J.*, LVI (1976), 66, 71.

## EARLY ISLAMIC POTTERY FROM FLAXENGATE, LINCOLN (Pl. XI)

The discovery of six sherds of an early Islamic vessel during the 1975-76 excavations of the Viking period settlement on Flaxengate in Lincoln now links the Danelaw with the Islamic East.

The first timber buildings of the Anglo-Scandinavian settlement on the Flaxengate site were built toward the end of the 9th century. Two of the sherds were found stratified in contexts relating to the earliest period of occupation, one in the open area behind the earliest houses, a second in a pit with a coin of c. A.D. 905. Three further sherds came from the upper part of the accumulation separating Roman and Anglo-Scandinavian levels, into which they must have been trampled; and the sixth, a fragment, appeared residually in a pit relating to the third phase of building in the mid-10th century.<sup>12</sup>

The six sherds, of which the four largest are illustrated (Pl. XI), are non-joining fragments of a coarse-walled, handmade, straight sided jar, in a hard fabric consisting of much fine subangular quartz in a cream matrix.<sup>13</sup> One sherd bears the impression of a piece of grass or straw. The interior is coated with a haematite-rich slip, and haematite blooms have formed in firing where the slip was thickest, above the low ridge on the interior of the shoulder (Pl. XI, A, left). The jar was partly covered with an opaque alkaline glaze of rich turquoise which appears to have been painted on, more thinly below (see Pl. XI, B, where an attempt has been made to place the sherds in their correct relative positions on the basis of thickness of wall, slip and glaze).

The sherds were recognized as early Islamic by Dr D. B. Whitehouse, whose excavations at Siraf on the Persian Gulf produced some thousands of alkaline glazed sherds of jars, jugs and bowls among the rubbish built into the platform of a mosque completed in A.D. 803-4.<sup>14</sup> The Siraf pottery has a finer fabric and more iridescent glaze typical of the alkaline glazed wares of the Persian Gulf area, whereas the sandier fabric of the Flaxengate sherds and the matt quality of the glaze resemble the products of the contemporary industry in N. Syria. Pottery identical to these sherds was produced at Samarra in the 9th century, and at Apamea from the 10th century.<sup>15</sup> Both centres produced finer, decorated plates and bowls as well as the coarser, utilitarian 'bad wares' which the Flaxengate sherds resemble.

Why should Syrian 'bad wares' have been traded so far afield? Microscopic examination<sup>16</sup> revealed specks of iron pyrites embedded both in the glaze along the fracture of one sherd (Pl. XI, B, lower left), and in the slip with which the interior of the vessel was coated. This may not have been so 'bad' a ware after all, but one specially treated to protect costly contents. The jar would appear to be a prototype of the Syrian tin-glazed *albarellos* which circulated widely in medieval Europe, and as such, may have arrived in the city still containing the precious substance with which it was filled in the middle east.

The connexion of the Flaxengate settlement with the Scandinavian invasions of the late 9th century was amply demonstrated by the 1975-76 excavations. At much the same time, Scandinavian traders were pushing down the Volga to the Caspian. The chief lure was silver, rich mines in Afghanistan and elsewhere being exploited by the Caliphate of Baghdad from the late 9th century.<sup>17</sup> Kufic silver flooded Scandinavia, especially Sweden, reaching a peak in the period 890-950.<sup>18</sup> Scandinavian and Baltic

traders offered furs and slaves in exchange, as described by the Arab Ibn Fadlan early in the 9th century.<sup>19</sup> Both at the bend in the Volga and at its mouth in the Caspian, the Scandinavian trade route linked up with the major overland trade routes for middle Eastern commodities.<sup>20</sup>

Along the Volga, in settlements such as Birka in Sweden and Hedeby in Schleswig,<sup>21</sup> and also at York,<sup>22</sup> the traders of the Viking age established centres of a common pattern; defended, with good access by water, containing both market areas and craftsmen's quarters where trinkets were produced, presumably to exchange for the incoming foreign goods. Lincoln fits this pattern well, with excellent river communications and Roman defences surviving into the medieval period. Excavations on the Flaxengate site revealed evidence of an active craftsmen's quarter. It is difficult not to wonder whether already by c. A.D. 900 a well-established merchants' quarter, where traders from Scandinavia and beyond could establish themselves for some weeks to trade, may have existed close by.

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NOTE

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NOTES

<sup>12</sup> Information on the structures of the Anglo-Scandinavian period at Flaxengate from Dominic Perring, and on the coins from Jenny Mann and R. H. M. Dolley; the results are to be published in the Lincoln Archaeological Trust monograph series. The coin is a St Edmund memorial silver penny. The Flaxengate site was excavated by the Lincoln Archaeological Trust, directed by Christina Colyer.

<sup>13</sup> I owe this and the following observations on mineralogy to Malcolm Fenton of the Lincoln Archaeological Trust.

<sup>14</sup> Information from Sarah Jennings of the Norwich Survey.

<sup>15</sup> Identification by J. M. Rogers, Department of Oriental Antiquities, British Museum, who is to publish the Samarra material. For the Apamaean pottery, see J. M. Rogers, 'Apamaca: the Medieval Pottery: Preliminary Report', J. C. and J. Balty (eds.), *Colloque Apamée de Syrie II* (Brussels, 1973), 253-70. Rogers's review of M. Rosen-Ayalon's report on the Islamic pottery of Susa (*Bibliotheca Orientalis*, 33 (1976), 370-74) discussed the difficulties in current dating and typology of early Islamic pottery from excavations in the middle East. The close dating of the Flaxengate jar should prove of interest to students of middle Eastern pottery.

<sup>16</sup> Confirmed by the Ancient Monuments Laboratory of the Dept. of the Environment.

<sup>17</sup> H. R. Ellis Davidson, *The Viking Road to Byzantium* (London, 1976), 52.

<sup>18</sup> G. Jones, *A History of the Vikings* (Oxford, 1973), 157, 171-72, 265.

<sup>19</sup> For translations: *Ibid.*, 164 and n. 2; Ellis Davidson, *op. cit.* note 17, 64 ff.

<sup>20</sup> Jones, *op. cit.* note 18, 254, map 10, for the probable route of the sherds between Syria and Scandinavia.

<sup>21</sup> *Ibid.*, 168-81 for summaries of these sites.

<sup>22</sup> J. Radley, *Medieval Archaeol.*, xv (1971), 37-38, 48 ff.; R. A. Hall, *Viking Age York and the North* (London, C.B.A. Research Report no. 27, 1978), 34.

## DARK AGE TREE-RING DATES, A.D. 490-850

Tree-ring dating of English oak was extended without difficulty back to c. A.D. 850, but my earlier<sup>23</sup> attempts to go further back in time have failed. Weather dating and numismatic dating had to be abandoned in 1959. Even cross-correlation methods failed when they were used in conjunction with an archaeologically estimated date in 1974, and the main purpose of this note is to correct the Old Windsor dates given at that time.<sup>24</sup>

The reader was indeed warned that 'various methods of dating must often be used before certainty is attained' and I had hoped, before page-proof stage, to obtain a radiocarbon date. Unfortunately, delay occurred because the site details could not be traced and 'although the visual agreement was not good' I applied cross-correlation only within the time range originally given on archaeological grounds (9th or early 10th century). The dating found then (650-896, zero 649) appeared to be the only possible one within that time-range.

Radiocarbon dates have now been published for Old Windsor<sup>25</sup> and have been obtained also for a matching Westminster curve measured by Mr D. Brett (Personal