Notes for Parts 1-3

1. For the purposes of this paper the following period sub-divisions have been adopted: Early Anglo-Saxon c. 400 - 650; Middle Anglo-Saxon c. 650 - 850; Late Anglo-Saxon c. 850 - 1066. At York the Middle Anglo-Saxon period is usually referred to as Anglian and the Late Anglo-Saxon period as Anglo-Scandinavian, but for the sake of brevity these terms have not been used here unless reference is specifically to York material.


3. See below notes 4 and 5.


6. See, for example, S. O’Connor, Conservation of the Coppergate ironwork, in Ottaway, Ironwork from Coppergate, pp. 466-71.


11. For details of the smelting process, Tylecote, Prehistory of Metallurgy, pp. 128-46.


27. See below, Part 4, pp. 7-8.


50. McDonnell in Ottaway, Ironwork from Coppergate, pp. 525-7 and microfiche p. 3:C11-13

51. Chisels from: Crayke, N. Yorks., Sheppard, Viking and other relics, p. 280, no. 26; Thetford, Goodall, Excavations in Thetford, pp. 76-7, nos. 5-7; Goodall and Ottaway, Excavations in Thetford, pp. 99-100, no. 5; York (Anglian), Rogers, Fisheragate, p. 1242, nos. 4938-9; (Anglo-Scandinavian), Ottaway, Ironwork from Coppergate, pp. 521-2, no. 2245.

52. Goodall, Excavations in Thetford, p. 77, no. 10.


54. Files from York, Ottaway, Ironwork from Coppergate, pp. 521-3, nos. 2246-7; and Tattershall Thorpe, Hinton, A Smith in Lindsey, p. 34, figs 22-4, nos 14-16.


56. Tattershall Thorpe, Hinton, A Smith in Lindsey, p. 26, figs 18 and 20, no. 7; Ottaway, Ironwork from Coppergate, pp. 523-4, no. 2249.


59. Ottaway, Ironwork from Coppergate, pp. 523-4, no. 2250.

60. Swanton, Anglo-Saxon Prose, pp. 25-7.


75. Wedges from Thwing, nos I6-8, and York, Ottaway, *Ironwork from Coppergate*, pp. 529-30, no. 2257.


78. Goodall, *Goltho*, pp. 177-8, nos 5-6.


81. Shaves from: Flixborough (hoard), Ottaway, *Life and Economy*, p. 258, fig. 7.8, 2460-1; York, Ottaway, *Ironwork from Coppergate*, pp. 531-2, no. 2259.


84. See Part 1, p. 6.

85. Brandon, unpublished, excavated by Suffolk Archaeological Unit, sfnos 9904; Hamwic, Addyman and Hill, *Saxon Southampton*, pp. 64-5, no. 12 (length 160mm).


90. Goodall, *Object and Economy*, pp. 299-300, no. 412.


94. For Thetford, Goodall, *Excavations in Thetford*, p. 81, nos 41-2 (single armed); and York, Ottaway, *Ironwork from Coppergate*, pp. 554-5, nos 2744-7 (double-armed).


Ottaway: Products of the blacksmith in Mid-Late Anglo-Saxon England, 4


106. Wicken Bonhunt, sfno. 60.


111. Tweezers from Thwing, nos I21-2, and York, Ottaway, Ironwork from Coppergate, pp. 550-1, nos 2701-4.

112. Ottaway, Ironwork from Coppergate, pp. 542-7.

113. Ploughshares from: Flixborough, Ottaway, Life and Economy, p. 245, fig. 6.1, no. 2360; St Neots, Addyman, Late Saxon settlements in the St Neots area, p. 94, no. 30; Thetford, Goodall, Excavations in Thetford, pp. 81-2, no. 43; Westley Waterless, Fox, Archaeology of the Cambridge Region, pl. 35.

114. Hurbuck: Hodges, Anglo-Saxon remains. Scythe blade tip from Thetford, Goodall, Excavations in Thetford, pp. 81-2, no. 46.


116. BL, Cotton Tiberius B. V, fol. 3v (February); Temple, Anglo-Saxon Manuscripts, p. 104. Bill hooks or pruning hooks from Flixborough, Ottaway, Life and Economy, (excavation) p. 245, no. 2361 (hoard), p. 258, fig. 7.9, no. 2465.


118. Adam and Cain digging, Oxford Bodleian Library, Junius 11, p. 49; Ohlgren, Textual Illustration, pl. 16.25. Spade shoes from: Southampton, P. V. Addyman and D. Hill, Saxon Southampton, p. 65, no. 13; Thetford, Goodall, Excavations in Thetford, pp. 81-2, nos 44-5; York, Ottaway, Ironwork from Coppergate, pp. 555-6, no. 2748.

119. Ottaway, Ironwork from Coppergate, pp. 556-7, no. 2750.

120. Fish hooks from: Flixborough, Ottaway, Life and Economy, p. 252, fig. 6.4, nos 2405-22; Thetford, Goodall and Ottaway, Excavations in Thetford, p. 102, no. 52; Winchester, Goodall, Object and Economy, p. 818, nos. 2537-9; York (Anglian) Rogers, Fishergate, pp. 1317-9, nos 5038-9, (Anglo-Scandinavian) Ottaway, Ironwork from Coppergate, pp. 600-1, nos 2991-5.


122. Size as the principal criterion for distinguishing between a knife and a scramasax is employed by V. I. Evison, A decorated seax from the Thames at Keen.

123. For York, Ottaway, Ironwork from Coppergate, pp. 576-7.

124. These features are described in full in Ottaway, Ironwork from Coppergate, pp. 579-82.

125. Inlaid knives from stratified contexts include Middle Anglo-Saxon examples from: Easton Down, Hants, S. M. Davies, The finds, Archaeology and the M3, P. J. Fasham and R. J. B. Whinney, Hampshire Field Club Archaeol. Soc., Monogr. 7 (1991), pp. 40-6 at pp. 42-3, fig. 33, no. 10; Flixborough, Ottaway, Life and Economy, pp. 204-5, figs 5.28 and 5.30, nos 2046 and 2060; Hamwic, SOU24.1889, SOU99.153, SOU169.266. Late Anglo-Saxon examples from: Canterbury, A. D. Saunders, Excavations in the abbey church of St Augustine’s Abbey, Canterbury, Medieval Archaeol. 22 (1978), pp. 25-63, fig. 11, no. 13; Cheddar, Goodall, Cheddar, p. 264, no. 31; London, Pritchard, Small finds, pp. 124-7, no. 1; Oxford, B. Durham, Archaeological investigations in St Aldate’s, Oxoniensia 42 (1977), fig. 25, no. 5; Wicken Bonhunt, J. Musty, K. Wade and A. Rogerson, A Viking pin and inlaid knife from Bonhunt Farm, Wicken Bonhunt, Essex, Antiq. J. 53 (1973), p. 287 (sfn. 286); Winchester, Goodall, Object and Economy, p. 841, no. 2654; Rees et al., Artefacts and Society, pp. 314, 317, fig. 175, plate 4, no. 2238; York, Ottaway, Ironwork from Coppergate, pp. 579-81, no. 2809.


128. For a description of the principal macrostructure types, Tylecote and Gilmour, Metallography of Early Ferrous Edged Tools, pp. 2-3.

129. Pattern-welded knives from: Hamwic, SOU31.670; London, Pritchard, Small finds, p. 127, no. 9; Thetford, Goodall, Excavations in Thetford, p. 83, no. 103a; York, Ottaway, Ironwork from Coppergate, p. 598, nos 2756 and 2892; McDonnell, ibid., microfiche p. 3:D3.

130. See Part 3, pp. 7-8.

131. For a comprehensive list of references and further discussion, Goodall, Object and Economy, pp. 836-8; additional examples from Hamwic, SOU24.13, 278;


134. M. Biddle, Knives used by scribes, in Biddle, *Object and Economy*, pp. 738-41.

135. S. Margetson, Objects from Burial 451, in A. Rogerson, *A Late Neolithic, Saxon and Medieval Site at Middle Harling, Norfolk*, East Anglian Archaeol. 74 (Gressenhall, 1995), pp. 79-80, fig. 76, nos 4-5.

136. M. Biddle and B. Kjølbye-Biddle, Repton and the Vikings, *Antiquity* 66 (1992), pp. 36-51, fig. 6, no. 10.

137. Middle Anglo-Saxon example from Thwing, I77. Late Anglo-Saxon examples from Carlisle Cathedral, sfn. 218 (unpublished, excavated by Carlisle Archaeological Unit), and York, Ottaway, *Ironwork from Coppergate*, p. 588, nos 2979-81.


140. Thwing, I81; others from Flixborough, Ottaway, *Life and Economy*, p. 218, fig. 5.31, nos 2311-12.


142. For Thetford, Goodall, *Excavations in Thetford*, pp. 94-5, no. 196, and York, Ottaway, *Ironwork from Coppergate*, pp. 599-600, no. 2989, and Waterman, Late Saxon, Viking and early medieval finds, fig. 5, no. 10.


149. See, for example, J. R. Mortimer, *Forty Years Researches in the British and Saxon Burial-Mounds of East Yorkshire* (London, 1905), pl. 28, fig. 225.

150. See Part 1, p. 12.


156. For clench bolts from 16-22 Coppergate and discussion of their use, Ottaway, *Ironwork from Coppergate*, pp. 615-8.


Carpentry (London, 1980), pp. 21-2. There is an excavated example from Goltho, Goodall, Goltho, pp. 180-2, no. 88.

For staples from 16-22 Coppergate and a discussion of their use, Ottaway, Ironwork from Coppergate, pp. 619-23.

In recent times large staples have been known as 'timber dogs' or 'dog joiners', see Salaman, Dictionary of Tools, p. 173.

Hinge pivots from: Thetford, Goodall, Excavations in Thetford, pp. 89-90, nos 138-45; Winchester, Goodall, Object and Economy, p. 330, nos 564-77; York, Ottaway, Ironwork from Coppergate, pp. 635-7.

For example: London, British Library, Cotton Caligula A. xiv fol. 22; Temple, Anglo-Saxon Manuscripts, nos 113-5, illus. 293; Oxford, Bodleian Library, Junius II, p. 66 (illustration of Genesis showing Noah's Ark); Ohlgren, Textual Illustration, pl. 16.38.

See note 159.


For example on chests from Mästermyr, Arwidsson and Berg, Mästermyr Find, fig. 1, and Oseberg, Grieg, Kongsgaarden, figs 66-7, pl. 10.


See Part 2, pp. 15-16.

Figure 8-shaped hasps from Thetford, Goodall, Excavations in Thetford, p. 89, nos 162-7 (164 with decorated attachment link), and Winchester, Goodall, Object and Economy, p. 973, nos 3473-7.


171. See below, Part 2, p. 12.

172. Evison, *Dover*, fig. 21, no. 8c.


823. no. 2579; York, Ottaway, *Ironwork from Coppergate*, pp. 652-3, nos 3561-2 and 3565.


89. Goodall, *Object and Economy*, pp. 1016-17, no. 3686. For mode of operation, see also Ottaway, *Ironwork from Coppergate*, fig. 288.


93. Examples from York, Ottaway, *Ironwork from Coppergate*, nos 3637, 3641 and 3653.


203. S. Grieg, *Viking Antiquities in Scotland*, *Viking Antiquities in Great Britain and Ireland* 2, ed. H. Shetelig (Oslo, 1940), p. 61, fig. 34.

204. For Birka, B. Arrehnius, Bügelfibeln, *Birka II, 1: Systematische Analysen der Gräberfunde*, ed. G. Arwidsson, (Stockholm, 1984), pp. 39-44; see also, for example, H. Simonsson, En senvikingatida gravfält från Västmanland, *Fornvännen* 64 (1969), pp. 69-89 at p. 73, fig. 5.

205. See Part 2, p. 9.

207. For Northampton, see note 203 above; Lincoln, Flaxengate, sfno. Fe75, 2552, and Repton, sfnos 4809 and 5257.

208. Examples from Hamwic, e.g. SOU15.8, SOU31.150; Ramsbury, Evison, *Ramsbury*, p. 35, no. 6; York, Ottaway, *Ironwork from Coppergate*, pp. 690-1, nos 3789-93.


219. Middle Anglo-Saxon spurs from Harling, Margeson in Rogerson, *Harling*, fig.76, no. 9, and Hamwic, SOU169.2184. Probable ninth century spurs from York,

220. Late Anglo-Saxon spurs from: Northampton, Goodall, St Peter's Street, p. 273, no. 120; Thetford, B. Ellis, Spurs, in Rogerson and Dallas, Excavations in Thetford, pp. 266-76; York, Ottaway, Ironwork from Coppergate, pp. 698-704, and Waterman, Late Saxon, Viking and early medieval finds, fig. 8, nos 5-7, fig. 25, no. 8.

221. As originally noted in E. M. Jope, The tinning of iron spurs a continuous practice from the tenth to the seventeenth century, Oxoniensia 21 (1956), pp. 35-42. For a spur with brass plating, Wheeler, London and the Vikings, fig. 19.

222. Ottaway, Ironwork from Coppergate, pp. 702-3, fig. 305.


224. Complete or near complete examples include one from Hamwic, SOU169.974, two from Thwing, I331-2, and one from Wicken Bonhunt, sfno. 381.


228. Examples with round and rectangular eyes from Thetford, Goodall, Excavations in Thetford, pp. 99-100, no. 258, York, Ottaway, Ironwork from Coppergate, p. 706, no. 3849, and Waterman, Late Saxon, Viking and early medieval finds, fig. 8, nos 1-2. Examples with two round eyes from: London, Wheeler, London and the Vikings, p. 42, fig. 20, nos 1-2.; Goltho, Goodall, Goltho, pp. 184-5, no. 161; Thetford, Goodall, Excavations in Thetford, pp. 99-100, nos 259-61; Winchester, Goodall, Object and Economy, pp. 1043-4, nos 3881-3.


230. Incomplete bits with bar made separately from the strap-joiner from Beverley, Goodall, Lurk Lane, p. 134, no. 564, and Winchester, Waterman, Late Saxon, Viking and early medieval finds, pp. 74-5, fig. 8, no. 2. Single bars from: Beverley, I. H. Goodall, in D. H. Evans and D. G. Tomlinson, Excavations at 33-5 Eastgate, Beverley, 1983-86, Sheffield Excavation Reports 3, pp. 151-61, at pp. 160-1, no. 467; Thetford, Goodall and Ottaway, Excavations in Thetford, pp.110-1, nos 133-4; Winchester (Sussex Street), Rees et al. Artefacts and Society, p. 289, fig. 162, no.
1999. Complete example of bit with strap-joiner made in one piece with the bar from York, Waterman, Late Saxon, Viking and early medieval finds, pp. 74-5, fig. 8, no. 1, and single component of a bit of similar form from Thetford, Goodall, *Excavations in Thetford*, pp. 99-100, no. 249.

231. Examples from Beverley, Goodall, *Lurk Lane*, p. 134, no. 566 (boss); Thetford, Goodall, *Excavations in Thetford*, p. 100, nos 262-3 (bosses); Winchester, Goodall, *Object and Economy*, pp. 1043-5, nos 3885A (boss) and 3886 (pierced).


235. Wicken Bonhunt, sfno. 225.


241. Middle Anglo-Saxon examples from Thwing, I350-1. Late Anglo-Saxon examples from York, Ottaway, *Ironwork from Coppergate*, nos 3919 and 3921 (small), and nos 3918 and 3926 (large). Other small examples from St Neots, Addyman, Late Saxon settlements, pp. 92-3, no. 9, and Thetford, Goodall, *Excavations in Thetford*, p. 105, nos 299-301, and Goodall and Ottaway, *Excavations in Thetford*, pp. 111-12, no. 142.


247. See note 29.


249. See note 32.