South Welsh socketed axes and other carp's tongue conundrums

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During the ninth century BC, and especially in its second half, considerable quantities of bronze products were being moved around western Europe, much of this material eventually to end up buried in the ground, subsequently to be left there, far from its starting point. What lay behind this traffic, and why so much metal was abandoned, is largely a matter for guesswork. South Welsh socketed axes epitomise some of the more baffling aspects of this phenomenon.

When I first met Frances Lynch, fifty years ago, it is quite likely that I was looking at South Welsh socketed axes. I say this with some confidence because we were in the offices of the National Museum in Cardiff, where I had just started my postgraduate research on Welsh Bronze Age metalwork; and anyone working on Welsh Bronze Age metalwork inevitably spends a lot of the time examining South-Welsh axes. Frances, too, was just beginning her postgraduate research, she at Liverpool, I just down the road at the Cardiff Department. I cannot remember whether Frances, like me, was also learning to cope with hot drinks without sugar, dispensed by the wonderful and generous ladies of the Archaeology Department of those days, who always had plenty of coffee, tea and milk, but absolutely no sugar. But a steadfast friendship with Frances and hot drinks without sugar have both stayed with me to this day; from wildest Wales through the Portuguese bush, via the bogs of Ireland, to the megaliths and restaurants of France.

It is a curious fact that despite South Welsh axes being among the most distinctive and easy-to-recognise socketed axes in Britain, they are still frequently confused with other ribbed socketed axe types and misidentified, even by reputable prehistorians. In part this may be due to the fear of many of getting to grips with the arcane art of bronze typology, but also to the fact that in all the revolution in bronze typology and chronology that took place between 1955 and 1980, no one ever tried to describe in detail what characterised South Welsh axes and made them potentially so easy to distinguish from other ribbed socketed axes. In my own case it was probably familiarity breeding contempt; they were so familiar to me that I never got round properly to trying to make them familiar to others, so that when I wrote about South Welsh axes and Llantwit-Stogursey metalworking in 1968 (Burgess 1968), I made no attempt to define the type. Even that early in my career, however, I had probably forgotten that I had once attempted to do just that, but in a source so obscure that very few can ever have found it, never mind read it, even had they wanted to. It was in a cyclostyled local publication called the *Journal of the Barry and Vale Archaeological Group*, dated November 1963. But it has not entirely sunk without trace, because it has been cited by some assiduous researchers, as I was reminded in preparing this present contribution (e.g. by Briggs and Williams 1995, in publishing the Myddfai hoard, Carmarthen). I was quite taken aback recently to find a copy of it still among my offprints. The Barry and Vale was a 'group of very few members' according to the editorial of that edition, and what happened to it I have no idea, since 1963 was also the year I left Wales for good. Its editors were Howard Thomas and E. J. Beare, but I remember I was induced to submit an article by one Jeremy ('Jake') Akerman, an art student and amateur archaeologist in the region at that time. He

later went on to a very different life in Canada, via the Fortress of Louisbourg excavations in Nova Scotia, from where he went on to pursue a new life in Canada, for long having a successful career in Nova Scotia politics.

My 1963 contribution, entitled 'The "South Welsh" socketed axe', was mainly an attempt to describe comprehensively the main characteristics of the type. I prefaced my remarks by emphasizing the 'clumsy, rather shoddy workmanship' which characterises these axes, and I chose the accompanying illustrations to make this point. It is curious that subsequent considerations of the type have not given this characteristic the prominence it deserves. Typical, for example, are the poorly formed, often interrupted ribs (Fig. 1), but even when the blade is sharpened (and sometimes it is unsharpened, as it came from the mould) the finish is generally poor, with untrimmed casting seams at the sides, and the runner stubs on the top of the flattish socket rim left protruding. As to morphology, the diagnostic features should leave no doubt in identification; South Welsh axes present so many unique features. The most distinctive of these is that the three ribs depend directly from the underside of a narrow, cornice-like collar which is characteristically flat on the top. This contrasts with most ribbed socketed axes where the ribs descend not from the collar but from a horizontal moulding which encircles the axe immediately below the collar. There are minor differences in collar form, but these do not detract from this general rule. An exception is a variant with a deeper band collar, which will be considered in more detail below. While many South Welsh axes bear the converging ribs for which the type is famous, three parallel ribs are also common. In some cases slightly converging ribs hook in sharply almost to make a point. There are examples where the ribs angle slightly across the face, and variants with four ribs or two, sometimes with ribs at the edges of the face. The form overall tends to be wedge shaped, with straight sides which diverge moderately and sometimes not at all, to an edge which is at most slightly expanded and may be unexpanded. The sides are markedly ridged, and often emphasized by untrimmed casting seams, and this affords the body a strongly hexagonal section. The position of the loop famously, and almost uniquely in Britain, in many cases springs directly from the socket lip, but at least as many examples have a more normal loop position springing below the collar.

In 1981 Needham suggested a change of name and emphasis for South Welsh axes (Needham 1981), that they be termed Stogursey axes to avoid a potentially misleading geographical emphasis. He felt it important to acknowledge their numbers and widespread distribution throughout southern England as well as south-east Wales, and to emphasize that moulds for the type are still only known from southern England. Furthermore, the largest number of axes of the type from a single find was then in the hoard from Stogursey, Somerset (McNeil 1973). Subsequent finds have adjusted this picture (Briggs and Williams 1995, 44), with new hoards of the type from south Wales emphasizing the concentration there, including at least one hoard with more of these axes than Stogursey: from St Mellons, south Glamorgan (Stanton, 1984). This has at least twenty-five examples from six different moulds, with a casting jet indicating production perhaps not far away. It has been pointed out elsewhere (Briggs and Williams 1995) that not too much should be read into the present southern English monopoly of mould finds for the type and the absence of moulds in Wales, with the possibility of other, more fragile casting materials being used in south Wales. This gives particular interest to the hoard from Penwyllt, Breconshire (Savory 1980, 122, fig. 43.284), where most of the contents, including several socketed axes of South Welsh and variant forms, a tanged chisel and socketed gouges, have faint surface markings looking like carved wood. This suggests manufacture using wooden patterns, and thus some sort of clay moulds. The presence in the hoard of a number of casting jets points to production nearby.

From all these remarks it will be gathered that I am not in favour of a blanket renaming of South Welsh axes, though in recognition of their widespread occurrence and manufacture in southern England,

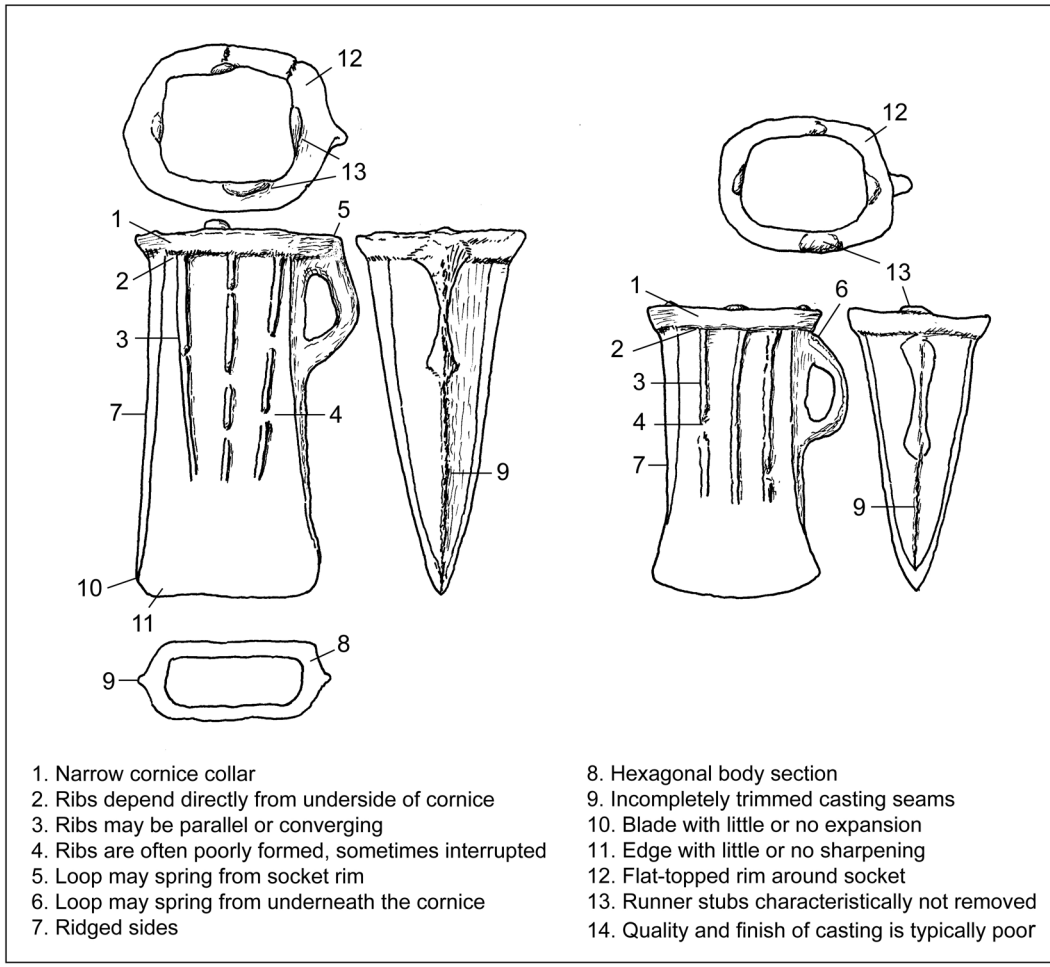


Fig. 1. Idealized axes illustrating the diagnostic features of South Welsh/Stogursey socketed axes.

'South Welsh/Stogursey axes' would be admissible were it not such a clumsy expression. But certainly it should be taken as read through much of this study, especially as it is quite likely that at least some of the 'South Welsh' axes in France were in fact imported from manufacturers in southern England. My reluctance to lose 'South Welsh' from their name does not stop with my remarks above. Cowen (1967, 408) many years ago and in a very different context stressed the importance of considering the overall shape of distribution patterns. One might add here the importance of scrutinising finds for special deposition circumstances which might distort the map. In the case of South Welsh axes the shape of the distribution pattern is very suggestive, with a marked concentration in south-east Wales, a scatter of finds immediately across the Bristol Channel in Somerset, then a loose scatter to the west in Devon and Cornwall, and another to the east all through southern England to the Thames estuary. What is noticeable is the complete lack of any concentrations of finds in southern England. It is a pattern which strongly suggests that these axes were initially developed in south-east Wales,

and then spread across the channel to Somerset, and from there throughout southern England. As to find circumstances, single finds of the type are abundant in south-east Wales, but perhaps more noteworthy is that nearly all the hoards of the period have South Welsh axes as a major component, and certainly their main socketed axe type. Contrast the situation in southern England, where the only hoard which has South Welsh axes as a major element is Stogursey, immediately across the sea from the Welsh concentration. Throughout southern England the majority of find spots of the type represent single finds, and any in hoards are very minor components. One must point out, too, the number of examples in carp's tongue hoards, usually only one or two per hoard, where they are swamped by other socketed axe types. Take away these carp's tongue occurrences and the map of the type in southern England would look very much thinner. This is even more the case in France, where nearly all the South Welsh axes occur in carp's tongue hoards. There are good reasons for thinking that carp's tongue hoards represent a special episode of hoard abandonment right at the end of the Bronze Age, as will be discussed in more detail below. What is important is that carp's tongue hoards constitute by far the largest group of hoards in south-east England (Burgess 1968) and north-west France, from the Belgian border to the centre-west of France, that they represent a very special circumstance of hoard formation and abandonment, and their numbers and often large size distort the distribution maps of very many individual bronze types on both sides of the Channel. The meaning of carp's tongue hoards we shall come back to below, but for the moment it is sufficient to note that if, for example, there were no carp's tongue hoards in south-east England, the number of Ewart Park phase hoards there would be as few as in many other parts of Britain.

CHRONOLOGY

It may seem strange only now to talk about the chronological background of these matters, but it seemed important first to examine some typological and distributional parameters. Anyone who dips into the chronology of the British Late Bronze Age may soon become confused by the array of contradicting dates bandied about. This, of course, applies largely to the absolute dates, though the relative chronology of the Atlantic Late Bronze is about to change (Burgess forthcoming). However, this affects mainly the correlations for Wilburton, and Penard before that. The relative sequence after Wilburton remains essentially what it has been for decades, that is to say that South Welsh/Stogursey axes were characteristic of the Ewart Park phase between Wilburton metalworking and the arrival of iron-working in the Llynfawr phase. When the Ewart Park phase was first conceived (Burgess 1968) its absolute dates were from the mid-eighth to the mid-seventh century BC, using an absolute chronology that had not changed appreciably for decades; but in the years since then the chronology of the whole Late Bronze Age in Britain and France has been pushed ever earlier in keeping with the Continental chronologies and improved scientific dating. As a result, Ewart Park now begins in the later tenth century and was over by *c*. 800 BC (Needham *et al*. 1997); that is, it now finishes before the point where it once began.

Was Ewart Park metalworking homogeneous or were some of its products earlier and some later? Various attempts have been made to divide the phase into Ewart Park 1 and 2, but until recently the evidence has been tenuous. That there were earlier and later stages has now been made clear by a study of carp's tongue swords (Brandherm and Burgess 2008); classic carp's tongue swords, of the type so common in carp's tongue hoards, emerged only later in Ewart Park. Their precursors, Huelva/St-Philbert swords, appeared at the end of Wilburton metalworking, and must have belonged mainly to the earlier Ewart Park phase. *Huelva/St-Philbert swords never occur in carp's tongue hoards.* The importance of

this discovery in South Welsh axe terms is in the new hoard from Llancarfan, Glamorgan (Lodwick and Gwilt 2008). This contains among other things several South Welsh axes of assorted forms, in association with a hilt fragment of a Huelva/St-Philbert sword. This is the only evidence which shows directly that South Welsh axes began early in Ewart Park. It may well be confirmed, though, by another recent hoard find from south Wales, from Llanbadoc Fawr, Monmouthshire (Portable Antiquities Scheme NMGW-440A24), where socketed axes, including several of South Welsh type, are associated with a length of undifferentiated carp's tongue sword blade. Unfortunately, without a hilt fragment there is no way at present of determining whether it is of Huelva/St-Philbert type, like Llancarfan, or classic carp's tongue. The two have blade forms at present indistinguishable, the distinctive rounded midrib edged by (normally single) grooves. Future work, perhaps on blade proportions or metal composition, may one day separate the two, but at present there is no way of telling whether such blade fragments found in late Wilburton and Ewart Park phase hoards such as Stogursey (McNeil 1973, fig. 5.59, 61, 66) and Yattendon, Berkshire (Burgess *et al*. 1972, fig. 18.58), are Huelva/St-Philbert or classic carp's tongue. Once upon a time such fragments would simply have been classed as 'carp's tongue', but with a chronological difference now involved, this will no longer do.

SOUTH WELSH/STOGURSEY AXES IN FRANCE

South Welsh axes have been found not only in Wales and the length of southern England but also widely in north and west France (Fig. 2). A starting point for tracking down French examples must be Eluère's paper (1979) on the hoard from Maintenon, Eure-et-Loire. This unusual (in France) hoard consists mainly of socketed axes, mostly of the south-eastern type so common in carp's tongue hoards on both sides of the Channel. Also present is a ribbed socketed axe, of a pattern widespread in Britain, but not actually a South Welsh axe. This led Eluère to investigate ribbed socketed axes in France, including the South Welsh type, and she illustrates some of the known examples of the latter and provides a map and lists. Unfortunately these are confusing, because the map appears to show South Welsh axes more widespread and numerous than they actually are. Her list of socketed axes *type gallois et variants* runs to fifteen findspots, but only ten of these are of genuine South Welsh axes. Some, for example those in Maintenon and in the Vénat hoard, Charente (Coffyn *et al*. 1981) are certainly ribbed axes, but of unclassified 'British' types. Others, also plotted on the map here (Fig. 2), may genuinely betray South Welsh influence, and these will be considered in greater detail below.

Ten of the ribbed axe finds from France listed by Eluère are definite axes of South Welsh type, representing eleven actual axes, there being two in the Menez Tosta hoard. At least four more are known, and even further away there are intriguing axes from Languedoc and Tarragona in Catalonia that have claims to be related forms.

A. *South Welsh axes listed by Eluère* (* seen by CB)

1. *Hoard, Amiens-Plainseau, Sommes: Blanchet 1984, 279–82.
2. Bassin des Subsistances, Cherbourg, Manche: Verron 1976, fig. 4.6.
3. Avranches area, Manche: Coutil 1898, 1910.
4. Hoard, Auvers, Manche: Jacob-Friesen 1968.
5. Hoard, St Laurence Valley ('Blanche-Pierre'), Jersey: de Mortillet 1906; Hawkes 1937, pl. 8.
6. *Hoard (?), Saint-Quay-Portrieux, Côtes-d'Armor: Briard *et al*. 1977, 53, pl. XV.118. Found with a related ribbed axe (below).

7. *Hoard, Le Folgoët, Finistère: Briard 1965, fig. 74.9.
8. *Hoard, Menez Tosta, Gouesnach, Finistère, two examples: Briard 1956–58, pls III.13; V.17.
9. *Hoard, Pointe-er-Vil, Locmariaquer, Morbihan: Briard 1965, 317. Vannes Mus.
10. Hoard, Notre-Dame-d'Or, Vienne: Millotte and Riquet 1959, pl. I.1.

Other examples, not in Eluère's list

11. Hoard, Saint-Genouph, Indre-et-Loire: Cordier 1984. Not in the original publication of the hoard, Cordier et al. 1960.
12. Hoard, Gonfréville-l'Orcher, Le Havre, Seine-Maritime: Verron 1976, fig. 4.4;. fragment of a typical South Welsh axe cornice collar with beginnings of a dependant rib.
13. Hoard, Graville-Sainte-Honorine, Le Havre, Seine-Maritime: Dubus 1911; Ensenat 1994. Cyril Marcigny, pers. comm. Fragment of a typical South Welsh axe cornice collar with flat top.
14. Hoard, St Ouen, Jersey: P. Driscoll, pers. comm.
15. Hoard, Esvres, Indre-et-Loire: Briard et al. 1982–83, 48–9, fig. 11.24. From that part of the carp's tongue hoard in the British Museum.

B. ***Axes influenced by or related to the South Welsh type, in Eluère's list***

1. Hoard, Boissy-aux-Cailles, Seine-et-Marne: Nouel 1957. Three parallel ribs descend from the underside of a narrow collar. This does not appear appropriate for a true South Welsh axe, but the drawing is clearly inadequate for certainty. The form is long and narrow for a typical South Welsh axe, but is not too far removed from products that would have been cast in some of the south English Stogursey moulds (Needham 1981, fig. 7).
2. Hoard, Saint-Quay-Portrieux, Côtes d'Armor: Briard et al. 1977, pl. XV.117. Slightly converging ribs descend from the underside of a deep, band collar, which flares out to a simple mouth without any moulding.
3. Hoard, Challans, Vendée: Verney 1990, fig. 6.15. This is very like no. 2 from Portrieux, except that the ribs converge sharply until they meet at a point.
4. Hoard, Longy Common, Alderney: Kendrick 1928.

The deep band collar of numbers two and three is typical of a South Welsh variant well-known in Wales itself, both as single finds, such as the axe from Sesswick, Denbighshire (Savory 1980, fig. 25.194), and in hoards with regular South Welsh axes, such as that from Llansantffraid Cwmdeuddwr, Radnorshire (Savory op. cit., fig. 41.278/2); but it is also present with normal South Welsh axes across the Bristol Channel in the Stogursey hoard (McNeil 1973, figs 2, 3). The band collar presumably shows a relationship with the faceted axes characterised by this feature, which are regularly associated with South Welsh axes. Number four also has a deep band collar, but is much broader and more squat, and the ribs are notably wide-spaced, rather like a Yorkshire axe. But parallels can be found both in Wales, for example in the Myddfai hoard (Briggs and Williams 1995, fig. 3.4), and probably in the Stogursey hoard in Somerset, though here squat axes with wide-spaced ribs lack their mouths (McNeil, 1973, fig.3.27, 28).

Other axes related to the South Welsh type

5. Hoard, St Mary's (Cadoret), Jersey: P. Driscoll, pers. comm. This is a long, slender, curved-sided variant rather like the Cascastel example below, and many of the same comments apply.

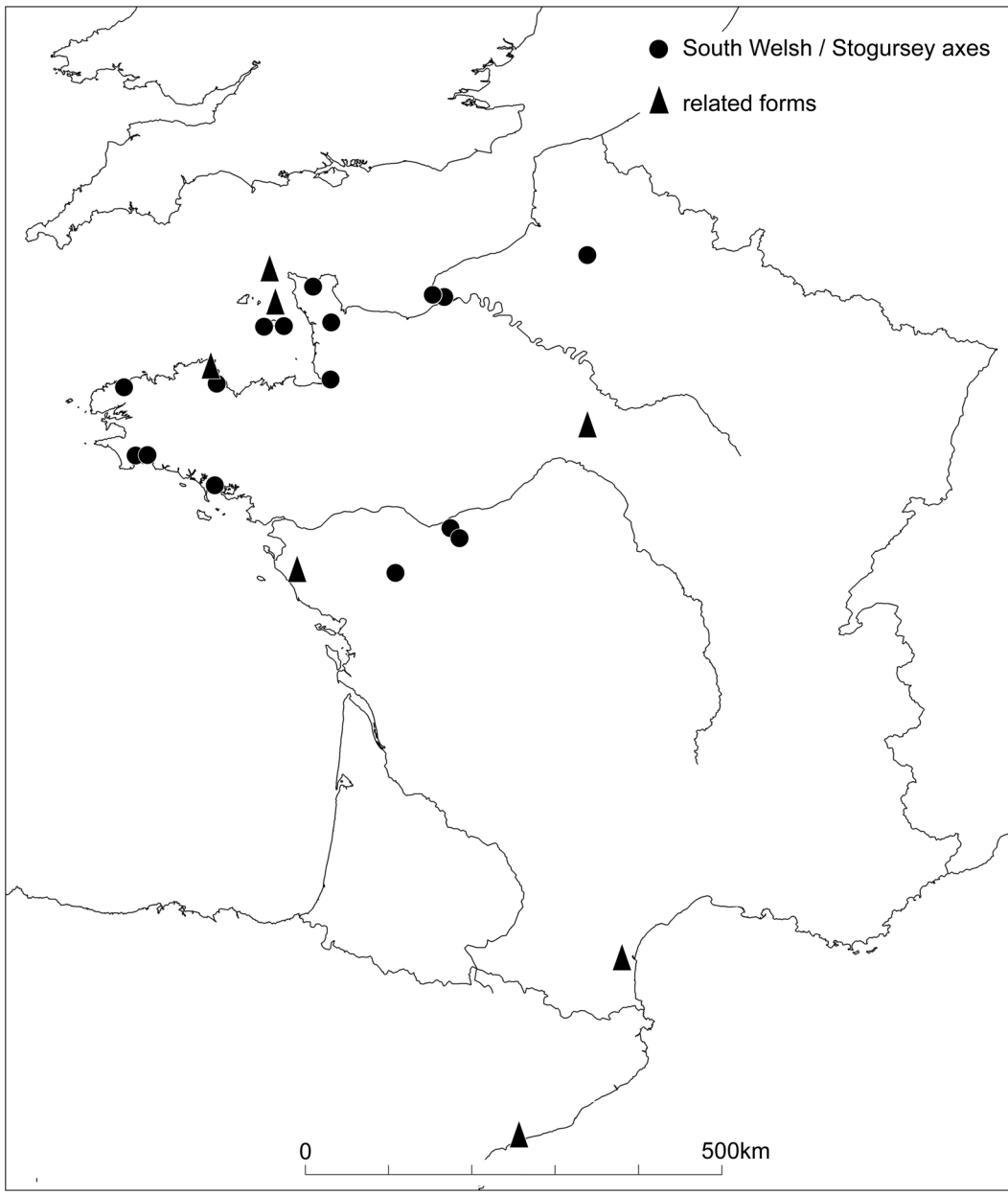


Fig. 2. Distribution map of South Welsh / Stogursey socketed axes in France and beyond.

6. Cascastel, Aude: Briard and Verron 1976, 70, fig. 2.2. This piece is rather reminiscent of the Boissy-aux-Cailles axe (no. 1 above), but it is not as long and curved sided, its collar is much more typically South Welsh, and it has strongly ridged sides giving the typical South Welsh hexagonal section. Altogether it resembles some of the longer, aberrant South Welsh axes in

the Stogursey hoard, such as McNeil 1973, fig. 2. 11, 14, 16, and also some of the long axes cast in the south English moulds, more than any Welsh examples.

7. Tarragona, Spain: Monteagudo 1977, taf. 122.1772. There are reservations about this axe, which has a history of passing through the hands of dealers and collectors (Brandherm, pers. comm.). It does, however, show an undeniable affinity with South Welsh axes, not just in its ribs descending directly from beneath a narrow collar and a loop springing directly from the socket lip. Also the section is typically hexagonal, and though the published illustration shows an atypical rounded collar, the mouth plan is an oval tapering to points at each end, very typical of some South Welsh axes (e.g. St Fagans, Glamorgan, fig. 3a).

Other 'British' ribbed axes in France

Many French carp's tongue hoards contain ribbed socketed axes of 'British' forms. In Britain the comprehensive classification of ribbed socketed axes has never been attempted, though a number of scholars, especially Needham (1986; 1993) have skirmished with the problem. For this reason at present we can do no more than record the presence of these 'British' ribbed axes. There are several in Eluère's list. The exception, the only other regional type of three-ribbed socketed axe which has been studied and mapped in Britain, is the so-called Yorkshire type (Burgess and Miket 1976). The morphology is as distinctive as that of the South Welsh axe, and was first described nearly eighty years ago (Fox 1933, 158). They are small implements, typically short, straight and often relatively broad, even more so than South Welsh axes. The treatment of the three ribs is their most distinctive feature. These are usually confined to the upper half of the face, descend from a horizontal rib below the collar, and are characteristically wide-spaced. The central rib is in the middle of the face, the outer two are positioned at the edges of the face and, when they follow closely the edges, may even diverge slightly from the central rib. Yorkshire axes have a very different distribution from the South Welsh type, being found the length of eastern Britain from the Forth to Cambridgeshire, and only rarely beyond to the Thames. The main concentration is in Yorkshire as their label implies. They are also quite common in north-west England, so that overall their distribution is as much eastern and northern as South Welsh axes are western and southern. The two are almost mutually exclusive, but not quite so. The Stogursey hoard includes at least one Yorkshire axe (McNeil 1973, fig. 3.27), and there are rare examples in the Welsh hoards, as in the find from Myddfai, Carmarthenshire (Briggs and Williams 1995, fig. 2.4). Both types are quite common in carp's tongue hoards, though not, apparently, in the same hoards, but this is to be expected of distributions which abut but scarcely overlap, at the Thames. Thus South Welsh axes are well known in carp's tongue hoards to the south in Kent and Surrey, while the Yorkshire type occurs in hoards to the north in East Anglia.

I was effectively correct in 1976 to suggest that Yorkshire axes, unlike the South Welsh type, never reached the Continent (Burgess and Miket 1976, 7). The only specimen I know possibly from France is in the Penmarch Museum in Finistère, but it is unprovenanced, and may be no more from France than a specimen in the Musée Dobrée at Nantes which is a far-flung escapee from the Heathery Burn Cave deposit, Co. Durham. Perhaps it is not surprising that there are none, with the blank in the distribution in Kent indicating a buffer zone between the main area of Yorkshire axes in eastern England, and the short sea crossings to France.

Why were South Welsh/Stogursey axes imported into France?

With twenty-two South Welsh and related axes from France, the next question is how they got there. The distribution is markedly western—in Brittany, the Channel Islands and Manche—with two

outliers at the mouth of the Seine, and only one example from Picardy. This suggests strongly that the type mostly reached France by the longer sea crossings in the western Channel, rather than by short crossings from Kent. This points to traffic from south-west England and from south Wales, especially in view of the parallels for the related axes with deep, flat collars. Comparisons with the Stogursey hoard, especially among atypical South Welsh axes in France, have been mentioned several times, but the band-collar axes from Challans and Portrieux find their best parallels in Wales.

Since South Welsh axes were such shoddy products in Wales and in England, how is it they are found over such a wide area of France? Why were they imported into France at all? It seems unlikely that simple sharp practice could explain a traffic which extended over such a wide area, when slipshod manufacture and lack of finish is almost the trademark of the type. Could it be that they were valued simply as raw metal, that they were being distributed as ingots if you like, much in the way that has been suggested for the widely trafficked, even worse-quality Armorican (Breton) socketed axes? This seems unlikely, because South Welsh axes were complex products (Needham 1981), and it seems a bizarrely uneconomic way of producing ingot metal.

The answer might be simpler to find if it was known what South Welsh socketed 'axes' were normally used for. Be that as it may, they clearly served some important function for French importers. Though they have been described as 'axes' as far back as they have been studied, few who have worked on them cannot have wondered at times what was their true function. Clearly most socketed axes were simply too small and light to be tree-felling axes or even serious woodcutting implements. They might have chopped sticks, not much more. Harding (1976) has investigated this problem and concluded that some socketed axes may have been agricultural implements, used for breaking up the ground. The majority may indeed have been hafted axe-wise rather than as adzes, to judge from patterns of damage and wear, but this does not preclude their use as hoes to judge from ethnographic examples of sideways-on hoeing. Harding stresses that wear patterns suggest socketed axes had a variety of uses, but if South Welsh axes were used mainly for breaking up the soil and chopping roots, this would help to explain the lack of care taken in their manufacture and especially their finish, and why it was deemed worthwhile shipping them to France. Certainly the answer must lie in some such esoteric function, where appearance and finish were of no importance.

Whatever the use of South Welsh/Stogursey axes in southern Britain, it is important to note that across the Channel they may have had a different role in the French toolkit from that in Britain. An important point to make is that South Welsh axes were not imported into France willy-nilly, but on the contrary were carefully selected for their size and weight. With one exception, the smaller axe in the Menez Tosta hoard (Fig. 3h), all the mainland French axes are in the length range 100–130mm, which is at the upper end of the length range for Welsh and English axes. Here the majority of axes are in the range 70–100mm, and axes longer than 100mm are much less common (but see longer examples Fig. 3). Exceptions which must be noted are the axes which would have been cast in a majority of the known moulds from southern England (Needham 1981): from Helsbury and Gwithian in Cornwall, and Bulford 1, Wiltshire. These produced axes in the range 120–150mm, but these were all unusually long and narrow, quite unlike the vast majority of South Welsh/Stogursy axes in Wales and England. Furthermore they all had converging ribs, and French customers, whatever the iconography or other significance of straight and converging ribs, preferred straight ribs. The only example with converging ribs is that from the Auvers hoard, Manche (Fig. 3d). It is as if French customers rapidly made it clear to their suppliers, whichever side of the sea the exchange was taking place, that they were only interested in large axes with straight ribs, not converging ribs. There are hints here of an exchange mechanism very much in line with modern commercial practice, rather than some more arcane process. The point may be emphasized by what appears to be another deliberate

choice on the part of French customers, because most of the axes they acquired show a different blade treatment from that normal across the Channel. Nearly all have widely expanded blades, in contrast with the unexpanded blades so widespread in Wales and England. It is perhaps likely, though, that this finishing process was done locally in France. That the French axes had been in use in France for some time, and were not recent arrivals, can be deduced by the state of most of their blades, nearly all of which show heavy blade use and damage.

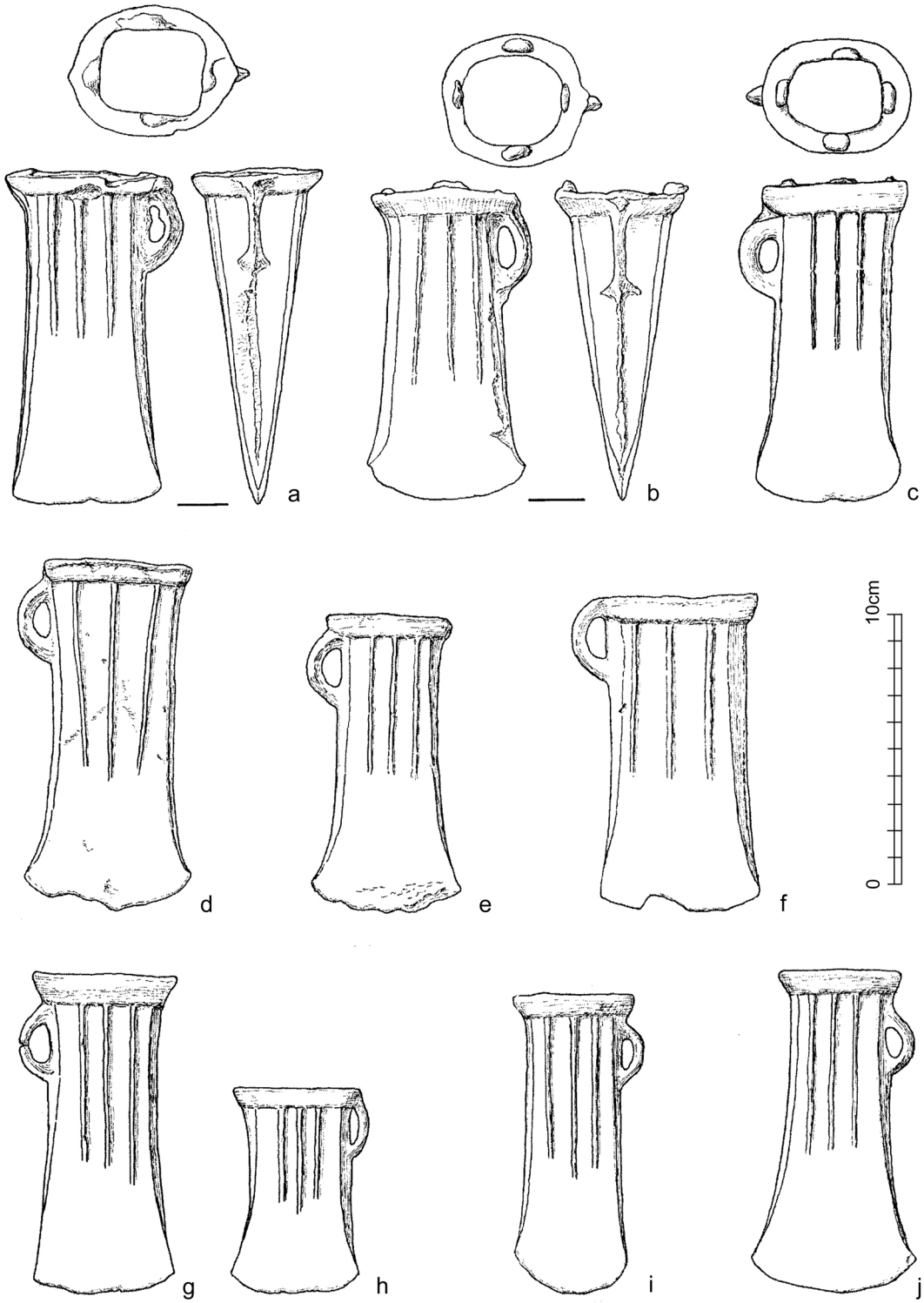
SOUTH WELSH/STOGURSEY AXES AND THE CARP'S TONGUE COMPLEX

Nearly all the south Welsh and related axes from France in the list above were found in hoards, and these were all carp's tongue hoards. These, as Bradley (1985, 692–3; 1998, 121) has reminded us, are prime examples of Evans' founders' hoards (Evans 1881, 457–8), consisting of apparently random collections of worn-out, rejected and damaged bronzes, with the longer and larger items broken into lengths and sizes convenient for transport in a pack or basket, whether by humans or animals, to a place of storage. Since Late Bronze Age metallurgy operated at least in part by scrapping and recycling, the traditional explanation of these hoards as founders' deposits seems more likely than the possibility we are looking at material broken into pieces for some arcane mystical practice such as votive deposition (Bradley 1985). The varied composition of carp's tongue hoards, and the treatment of their contents, all point to the collection and stocking of scrap for recycling. Also, the fact that ingot metal is so often included, similarly broken up for ease of transport and processing, as well as the by-products of the casting process such as jets and runners, and actual bronze moulds, all smacks of bronze smiths, as Evans originally thought.

If carp's tongue hoards do represent the stock-in-trade of bronze founders, their sheer numbers and complexities on both sides of the Channel pose follow-up questions: why were they never retrieved or used up? Alas, the carp's tongue phenomenon as a whole has never been studied in detail, despite the fact that the carp's tongue hoards represent far and away the most numerous single category of hoard in Atlantic Europe north of the Pyrenees (there being no carp's tongue complex in Iberia). Perhaps it is partly because of the sheer scale of the problem that even basic information is lacking. Find circumstances and siting in particular should provide valuable clues to understanding the hoards, but have never been comprehensively investigated. Unfortunately a recent study of the sites of metalwork hoards in south-east England (Yates and Bradley 2010) is concerned mainly with Hampshire and Sussex, areas peripheral to the carp's tongue zone. It deals little with Kent, which is one of the main carp's tongue areas of Britain.

Carp's tongue hoards in Britain and in France have much in common, but there are also major differences which have long been appreciated: the English hoards have more socketed axes, of a

Opposite Fig. 3. South Welsh/Stogursey axes: a. St Fagans, Glamorgan, from the hoard (?); b. Fairwater, Llandaff, Glamorgan, associated find; c. Bassin des Subsistances, Cherbourg, Manche (after Verron 1976); d. Auvers hoard, Manche (after Jacob-Friesen 1968); e. Saint-Genouph hoard, Indre-et-Loire (after Cordier 1984); f. Notre-Dame-d'Or hoard, Vienne (after Pautreau 1979, and a photograph courtesy of J. Gomez de Soto); g–h. Menez Tosta hoard, Gouesnach, Finistère (after Briard 1956–58); i. Pen-ar-Prat hoard, Le Folgoët, Finistère (after Briard 1965); j. Saint-Quay-Portrieux hoard (?), Cötes-d'Armor (after Briard *et al.* 1977).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greater range of types, the French hoards more end-winged axes; the English hoards have the British Ewart Park sword, the French hoards more carp's tongue swords; and the French finds have 'a much greater range of small objects such as razors, a greater variety of objects of unknown purpose, and much more bric-a-brac in general' (Burgess 1968, 17). Also, in France and in England there are local, regional differences. For example, in carp's tongue France, the distinctive spearheads of Vénat type (Burgess and O'Connor 2008, 55–6, fig. 3) are found widely in carp's tongue hoards in the Centre-Ouest, but not in Brittany or Picardy (Coffyn *et al*. 1981, carte 3). Indeed, apart from one example in the hoard from Auvers, Manche (Jacob-Friesen 1968), they are unknown north of Nantes. They are also unknown in Britain and Iberia, for the many dots on the distribution map of the type in those two lands (Coffyn *et al.*, loc. cit., carte 3) in all cases prove to be other spearhead types. Over the past few years I have been looking for them intensively in the many new carp's tongue hoards found in Britain in recent decades, as well as in many of the old discoveries, and this has not thrown up a single example, so it seems that the absence is genuine. There are also regional differences within the English hoards, such as the presence already noted of Yorkshire axes in the East Anglian hoards and of South Welsh axes in the hoards of the Thames Valley and Kent.

What is a 'British' or a 'French' type? This is a question repeatedly thrown up by carp's tongue hoards. Several of the French hoards with South Welsh axes and variants also include another British type, the Ewart Park sword: Plainseau, Auvers, Notre-Dame-d'Or, Challans and Graville-Ste-Honorine. Now this was undoubtedly a British type in the sense that it was developed in Britain, and occurs there in overwhelming numbers, where it was the archetypal sword type of Ewart Park metalworking. Now though a 'British' type, Ewart Park swords were also widely distributed in carp's tongue France, all over the north and the Centre-Ouest, where they occur mainly in the hoards, but also as single finds. Examples occur sporadically even beyond, in the Netherlands, Germany, Switzerland and Denmark (Coffyn *et al*., 1981, 192–3, carte 2). While some of these weapons may have been brought across the Channel, it is also possible that some were made on the Continent, especially in France, to judge from the unfinished 'fresh-from-the-mould' examples such as those in the hoards from Challans and Vénat. They have been scrapped without being finished, which suggests that they could have been sent across the Channel as broken scrap, or as blanks to be finished in France, but surely it is more likely that they were made not too far from where they were scrapped. Some have contemplated the possibility that the whole carp's tongue phenomenon was a two-way scrap trade, but it seems completely illogical that the French were sending their scrap to Britain, and British producers their scrap to France. It makes better sense if the carp's tongue hoards are seen as snapshots of what was available, either from local production or by exchange, and was circulating and in use in a particular area, in a comparatively short period which can be called BF3b/Ewart Park 2. It would include what was being sent from France to Britain and from Britain to France (including South Welsh axes) at that time, by whatever exchange process was current. In addition, on both sides of the Channel carp's tongue hoards reveal what was entering circulation from many other areas, as has been discussed in the context of the Vénat hoard (Coffyn *et al*., 1981, 33–40). The question of links between carp's tongue Europe and Nordic lands is particularly interesting, but must be considered elsewhere. Products and fashions from many directions were thus reaching England and north-west France, and it was the scrapping of this eclectic mix on both sides of the Channel which makes up the carp's tongue phenomenon. The maximum timescale for the deposition of these hoards can be narrowed down to about two generations, from *c*. 875–800 BC, this being the restricted period in which the classic carp's tongue swords, which so characterise carp's tongue hoards, were developed and used (Burgess and O'Connor 2008, 52–4; Brandherm and Burgess 2008, 142, 151–3; Burgess, forthcoming). But the window for their abandonment in the ground can be narrowed down even further. Over thirty years

ago I suggested that this abandonment phase could be confined to the last years of the Bronze Age when iron-working was gaining ground to such an extent that bronze smiths were forced to abandon their extensive stocks of redundant bronze (Burgess 1979, 278; Burgess and Coombs 1979, vi). At this point, because this notion has received such a mixed reception (Burgess and O'Connor 2008, 57; Brandherm and Burgess 2008, 152), I and not David Coombs must accept the blame for this idea of 'an orgy of bronze dumping' as it has been thought of, but which can better be seen as an episode of bronze abandonment. But now the carp's tongue abandonment window can be further shortened. Since the original identification of a Gündlingen sword fragment wedged in the socket of a south-eastern socketed axe of the kind characteristic of carp's tongue hoards (Burgess 1979), more likely Gündlingen fragments and Hallstatt C pieces have been identified in carp's tongue hoards in Britain and France (Burgess in Brandherm and Burgess 2008, 152–3; Gerloff 2004), suggesting a widespread abandonment of carp's tongue hoards at a time when Gündlingen swords were circulating, i.e. around 800 BC—Hallstatt C1a in central European terms. Another pointer to the same conclusion might be the Armorican socketed axes supposedly found in some carp's tongue hoards, including the Longy Common hoard, Alderney, hoard already noted. Armorican axes are notoriously difficult to date, but have long been thought of belonging to the First Iron Age, after the mainstream Bronze Age (e.g. Briard 1965, 271–5), so their presence in carp's tongue hoards should be significant for the dating of carp's tongue hoards. However, Gomez and his colleagues (2009) have recently been disputing the validity of French carp's tongue finds with Armorican axes as genuine associations, and the British evidence needs urgent appraisal. Be that as it may, 'economy of argument and the difficulty of finding variation in carp's tongue hoards suggests that most if not all' were abandoned in the ground in a few years around this time (i.e. the beginning of Hallstatt C) (Brandherm and Burgess 2008, 152). Indeed, the question can be put the the other way round: if carp's tongue hoards do not represent unused bronze stocks abandoned when the growth of iron-working left them without a purpose, what did happen to all that surplus bronze? But there is room for a retort: what, then, happened to unused bronze stocks in regions outside the carp's tongue world? The answer may simply be that they were never there in the same way, that the carp's tongue phenomenon is restricted to those areas where the dependence on scrapping and recycling for metalworking had long been almost total.

FUTURE WORK

This is by no means the end of the South Welsh story in France. Some of the most intriguing ideas in this study were only thrown up after the main text was finished, when I began to draw the French axes. It soon became clear that answers to many questions could only come from a younger and fitter person than me trekking round a lot of museums on both sides of the Channel, but especially in France, to draw and record properly those French axes which still exist. Published illustrations of the French specimens, and a lot of the British material, are without exception inadequate for the task of determining where they were produced, in Wales, southern England or both; and also for discovering whether some could actually have been manufactured in France. Published illustrations suggest some could have been made in France, but where photographs have become available to check the published drawings, serious discrepancies have been only too obvious. It is the problem of Ewart Park swords in France all over again.

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It may not be gentlemanly of me to record that Frances, like me, is in her sixth decade of ploughing her particular fields of material culture traditionalism. I was reminded recently of decades spent in dimly lit, unhealthy museum cellars and storerooms by the fact that as I was writing this piece an international conference on the Libyan crisis was meeting where once in the late 50s I shuffled bronze swords on a very large table. I have had long 'holidays' from the British Bronze Age, and especially the metalwork, in the decades since then, especially after 1980, to pursue other things in other (usually warmer) countries; sometimes with Frances herself. Indeed, it is only in the last few years that I have returned once more to bronzes, and I make no excuses for offering yet another study which many theorists will regard as more of the same. I think revisiting this well-worn material has important implications, and promises yet more possibilities for the future. Frances has for just as long tramped the hills and moors in rain and snow, all in search of the monuments which, together with the artefacts turned up by generations of material culture specialists, should form the basis of our discipline. Today, I am told by people who should know, many of the things that were routinely tackled by past researchers would no longer be possible for health and safety reasons; or because students would be reluctant to leave the comfort of their computer chairs. The theorists have often been less than kind in their appreciation and assessment of what mere material culture specialists have been trying to do; but it is only because of our long labours that the theorists have an edifice on which to build their interpretations, and to tell us what it is all about. How else, except by traditional methods, would we know that there was a type of socketed implement made in Wales and southern England around the late tenth-ninth centuries BC which for whatever reasons was carried at least as far away as western France? Now, perhaps the theorists can tell us why.

In one respect Frances has shown more courage than some of her contemporaries, and certainly more than me. She has not been afraid to look at recent trends such as phenomenology, and even write perspicacious and witty reviews about it. She has also shown a persistence over these several decades that would have been beyond my itchy feet. She has throughout remained devoted to Wales and its past, in all aspects of her work, whether in her teachings, in the field, in museums and in countless committees. Good luck to her, and may she long continue this loyalty to Wales.

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First I must thank Bob Silvester for inviting me to write something for Frances, and for his gentle insistence that Chalcolithic Sardinia would not be appropriate. It had to be Welsh or thereabouts, so that I have been compelled to revisit my distant Welsh past, but at least this has enabled me to think even more deeply about something that has been occupying much of my attention in recent years, the carp's tongue complex.

For much of the time I was writing this I was incapacitated and travel was restricted, and for this reason I have been more than usually dependent on the kindness and generosity of friends and colleagues in Britain and on the Continent in providing me with material and references. I must thank in no particular order Dirk Brandherm, who read my manuscript and made many useful suggestions; Brendan O'Connor, Anthony Harding, and Stuart Needham; Margaret and Bruce Finlaison for their help with finds in the Channel Islands, Philip de Jersey of the Guernsey Museum for photographs of the Longy Common hoard on Alderney, and Paul Driscoll for information on recent Jersey finds; Adrian James and the staff of the Society of Antiquaries Library in London laboured to trace the untraceable; I gave Michel Le Goffic in Finistère equally difficult tasks, and also Muriel Fily in Brittany. José Gomez in Angoulême was as always a tower of strength with his speedy replies about French sources, and Cyrille Marcigny generously helped with material from Normandy. I owe a

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Normally I would have been taxing Frances herself in writing something like this, but for once I have been forced not to bother her, and to think sideways. Since she has so often dabbled in Bronze Age metalwork, I hope the results will have some interest for her.

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