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The material culture and agricultural traditions in the early medieval eastern Merovingian areas: a new study proposal

La culture matérielle et les traditions agricoles au début du Moyen Âge
dans les régions de l'Est mérovingien: une nouvelle proposition à l'étude

Die materielle Kultur und landwirtschaftlichen Traditionen im frühen Mittelalter
in den östlichen Gebieten der Merowinger: ein neuer Vorschlag für das Studium

Paolo de Vingo

Introduction

Between the 5th and 8th centuries iron metallurgy underwent a complete and profound transformation, shifting from broad-scale intensive production (based on a model typical of the Roman-imperial economic organisation) to an economic system that tended to be regional, characterised by the dissemination of production centres across the territory and, to some extent, the subordination of metalworking activities to agricultural activities (*Cima 1986*, 189; *1991*, 121; *Farinelli – Francovich 1994*, 445–446; *La Salvia 1998a*, 23–24; *1998b*, 29; *La Salvia – Zagari 2003*, 947).

In order to understand this change, which presents powerful elements of discontinuity, a key element is the study of the Late Antique legacy, not from a macro-economic standpoint – in other words, not by examining the general trends of economic development – but using the material structures of production, and conducting an in-depth analysis of the technological heritage typical of Germanic populations (*White 1978*, 4–6). Archaeometry plays a decisive role here. While it cannot further specify the chronological horizon, it is certainly able to define the technical and productive one and thus the routes followed in the possible transfer of technical knowledge (*Mannoni – Giannichedda 1996*, 49–54; *La Salvia 1998b*, 24).

Rather than 'break', the word 'discontinuity' has been used, because it is better suited to discussions revolving around the production activities of a traditional and pre-industrial society. In effect, the term 'break' in such a context acquires an overly specific meaning of *caesura*, which often has the negative connotation of the cessation, disappearance or loss of technical knowledge. This perspective does not take into account the conformity of traditional artisanal knowledge – all of which based on practical know-how, excluding theoretical knowledge – which needs

the continuity of the crafts tradition and the stability of workshop organisation, intended not merely for the maintenance of the material structures of production, which include places and work instruments, but above all as an uninterrupted continuation of the technical precepts that are the true content of this trade and guarantee its endurance.

This continuity is also the fundamental assumption for defining technical processes capable of varying products according to the needs of different types of patrons (*White 1978*, 76; *La Salvia 1995*, 266–267; *1997*, 50–54). For the period examined here, there are no indications nor any archaeological findings that allow us to assume that the technological legacy handed down by the Greeks and Romans disappeared – unless we consider an effective decline in the overall volume of production to be entirely equivalent – or that there was a technical regression (*Monneret de Villard 1919*, 12; *White 1978*, 12–15; *Wickham 1988*, 121).

Consequently, the 'continuity-break' dichotomy is not consistent with the attempt to reconstruct the technological-productive structure of preindustrial societies delineated along the lines of complexity rather than a simple and pre-established path (*Pleiner 1993*, 540–553; *de Rijk 1995*, 81–86; *Voss 1995*, 133–138; *de Rijk 1997*, 43; *Pleiner 2000*, 45–47; *La Salvia – Zagari 2003*, 958–949).

0. Metal craftsmen in early medieval settlement contexts

Burials and settlement contexts can be characterised by personal or everyday items and the pottery used to prepare and preserve food, as well as the discovery of work tools, particularly those that may be related to metalworking, not only as a probable indi-



Fig. 1. Brno-Kotlářská (Czech Republic), grave goods from a goldsmith's burial (after Hegewish 2008, 257).



Fig. 2. Poysdorf (Austria), grave goods from a goldsmith's burial (after Stadler 2008b, 284).

cation of the conduct of crafts activities, but above all the special consideration that blacksmiths and goldsmiths enjoyed in the social structure, at least in the case of individuals buried in graves with metalworking tools (Giostra 2000, 13; Lusuardi Siena - Giostra 2003, 903).

Burials containing this type of object are quite rare in Italy and continental Europe alike and, overall, they mark a situation that shows little uniformity and may reflect a differentiation of roles and socio-economic connotations, only a small part of which can be gleaned from what was left in burial contexts.

In 1937, the early medieval burial of a male was discovered when the foundations of a building were excavated in Brno-Kotlářská, in what is now the Czech Republic. It contained a set of composite tools made up of an iron anvil, a pair of tongs, two iron hammerheads, a bronze receptacle, a small scale, four stone weights, a graver, fragmentary plates, a bronze disc, a sandstone rasp, bronze and iron trimmings, a horn comb and an iron axe head (Bóna 1976, 50; Tejral 1976, 81-82; 1988, 230; Čizmářová 1990, 20-21; La Salvia - Zagari 2003, 955; Hegewisch 2008, 256; Tejral 2008, 70-71) (Fig. 1).

A grave in the cemetery of Poysdorf (grave 6), Austria, also dates back to the first half of the 4th century and it included not only a shield boss, two knives and a buckle, but also large pincers, an iron anvil, two hammerheads, a sandstone rasp, a grindstone, a fragment of a small pair of tongs, tweezers, a clamp, and two bronze brooch models, one a 'bow' brooch and the other with 'opposing animal protomes' (Bóna 1976, 50-51; Stadler 1990, 32-33; La Salvia - Zagari 2003, 955; Lauer mann - Adler 2008, 301-302; Stadler 2008b, 287-288) (Fig. 2). Both burials present a deposition structure and instruments typical of the 'Late La Tène culture of the Iron Age' that had developed along the lower Elbe and in the Bohemian-Moravian area, as the production of iron shows rather similar characteristics in these two areas, not only in terms of the extensive organisation of the production centres spread throughout the territory, but also in the type of furnaces and the instruments that were used (Decaens 1971, 65-66; La Salvia - Zagari 2003, 957-958).

At the Langobard cemetery of Hegykő-Mező, Hungary (grave 34), the discovery of a small scale, a plate with a beaded edge that is probably Byzantine in origin, a finely decorated bone comb and an axe head allows us to speculate that it was the burial of a merchant who weighed and traded metals rather than that of a craftsman (Bóna 1976, 52-53; Bóna - Horváth 2009, 42-43) (Fig. 3). Lastly, several tools connected with the workmanship of iron were also found at the Langobard cemeteries of Veszékény-Nagyhalom (Bóna 1990, 62-63; Hajnal - Schmauder - Hegewisch 2008,

316-317) and Kölked-Feketekapu (Schmauder - Bócsi 2008, 347-348).

In the Langobard cemeteries on the Italian peninsula, the number of particular classes of artefacts and the presence of craftsmen and merchants among the buried confirm the commercial and productive liveliness of the individual settlements, which received and distributed products on a large scale (de Vingo 2012, 314-315).

In the Friuli area, the graves of these male individuals appear in the outlying areas of Cividale del Friuli in Grupignano and the cemetery of San Mauro. In the first case, it is an isolated burial that yielded a small anvil with a central hole and squared head, a curved and pointed implement, and a Mediterranean-style silver belt buckle, datable to the early 7th century. Despite the lack of information regarding the context in which this discovery was made - the associated materials do not make it possible to formulate specific theories regarding the ethnic group of the deceased, his social status or lifestyle - the fact that the burial is situated in an outlying area beyond the urban centre of Cividale may indicate a landowning craftsman buried on his estate (Brozzi 1963, 19-22; 1972, 167-174; Mat-

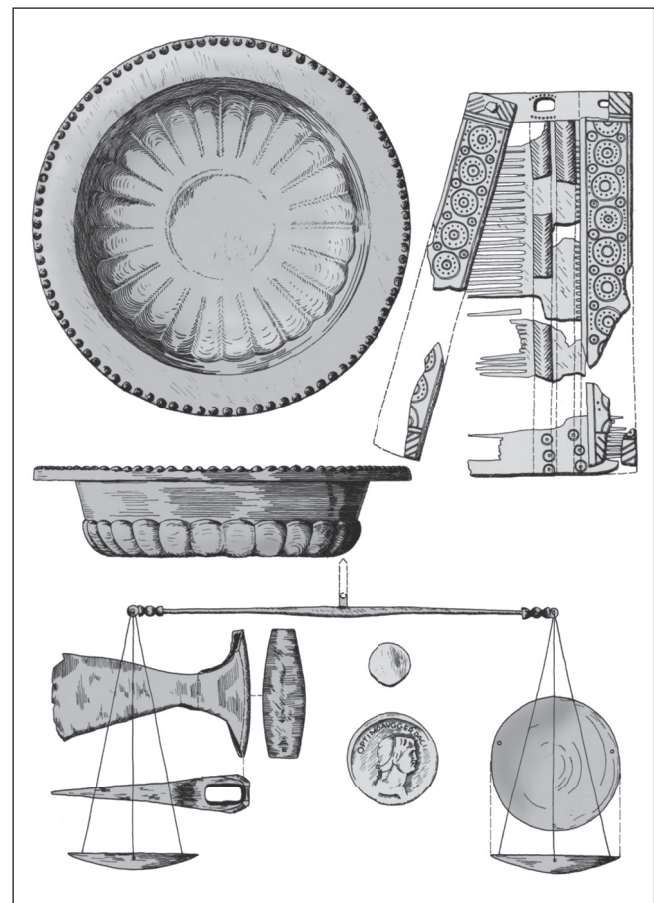


Fig. 3. Langobard cemetery of Hegykő-Mező utca (Hungary), grave goods from grave 34 (after Bóna - Bóna Horváth 2009, plate 10, 245).

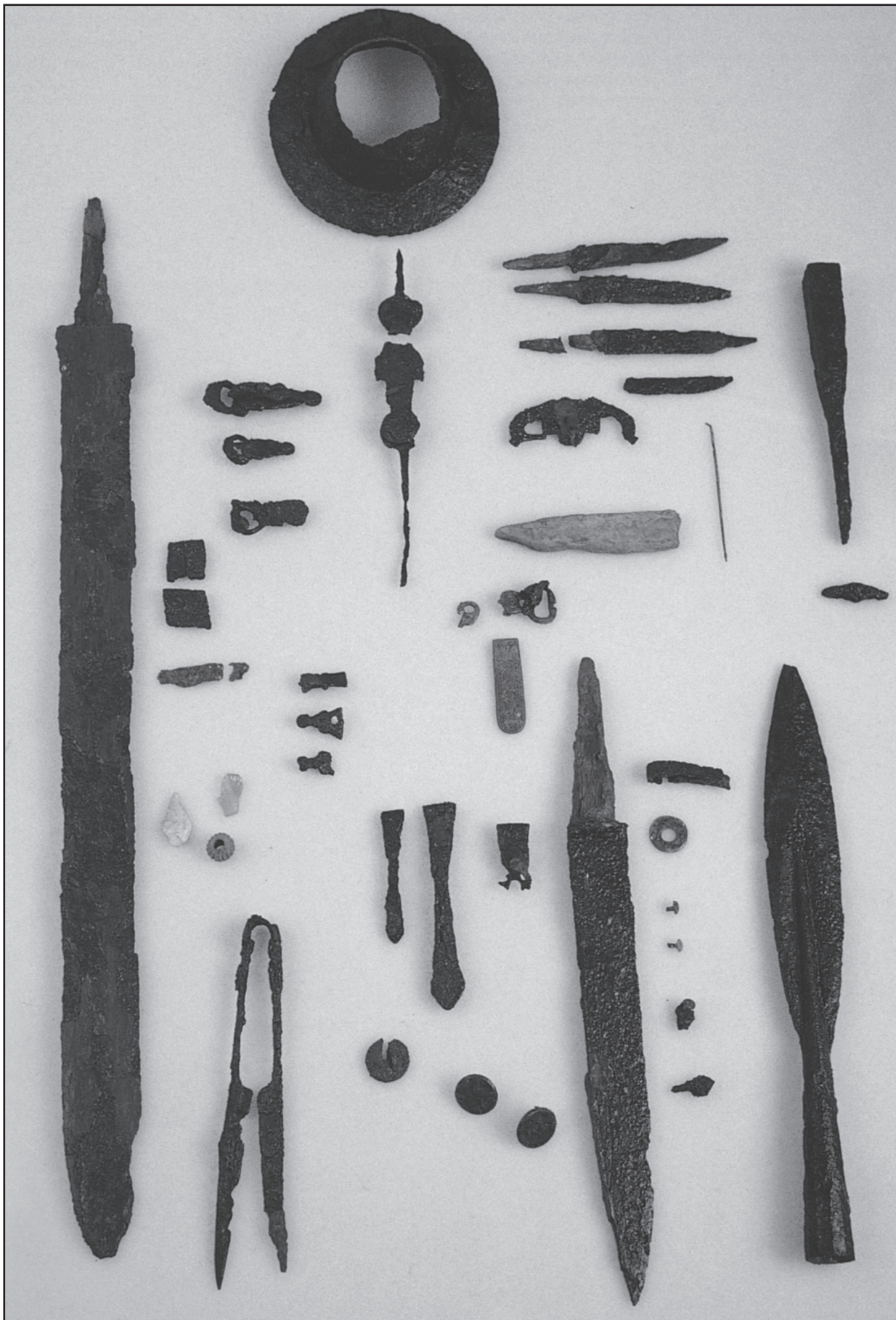


Fig. 4. Langobard cemetery of Leno-Portzano (Brescia, Italy), grave goods from male grave 224 (after De Marchi 2000, 479).

taloni 1989, 48–50; Brozzi 1990, 372; Ahumada Silva 1998, 149). Instead, the partial set of instruments that was found indicates formal and temporal continuity vis-à-vis the other Central European contexts that have been examined. In particular, the type of anvil that was found shows interesting parallels with similar implements from the Roman age and likely attributable to a Mediterranean production environment (Henning 1991, 71–74; La Salvia 2000, 68–69).

In the case of the cemetery in San Mauro, three graves of craftsmen/merchants have been discovered, two of which with artefacts that make this interpretation reliable (graves 2, 43), while the third one (grave 52) is more problematic (Ahumada Silva 2010, 105). In the heart of the Brescian duchy, one of the burials (grave 224) excavated in the Langobard cemetery of Leno–Porzano, dated to the second quarter of the 7th century, presented grave goods that included an anvil, a whetstone and a small iron block (Fig. 4). The utensils that were discovered tell us that the male buried here must have been a freeman (weapons and belt trimmings were found in the grave alongside the skeleton) and a craftsman-blacksmith, whose role in early medieval society is confirmed by documentary sources, which in the 8th century recalled their role as witnesses in the legitimation of private deeds, and thus indirectly acknowledging their importance (de Marchi 2000, 488–489).

A grave in the cemetery of Castel Trosino (grave 37) has also yielded a crucible and two iron implements, one of which may have been part of a scale, as well as a silver composite belt with a ‘dot and comma’ decoration, a small buckle and strap end made of bronze, a decorated gold cross and an African Red Slipware plate. This burial has been interpreted as that of a goldsmith – the deceased has been identified as a free craftsman, despite the lack of specific instruments and weapons – datable to the early 7th century. It clearly points to a high economic status, while the lack of weapons among the grave goods allows us to suggest that his origins were Roman-Byzantine. That possibility is not unlikely in a cemetery with a very high percentage of burials without grave goods. However, the substantial number of artefacts foreign to the Germanic material culture and the frequent lack of weapons represent two circumstances that can be interpreted as the consequence of the solid integration of different ethnic groups, rather than a rapid acculturation process of the Langobards (Ricci 1995, 237–243; Paroli – Ricci 2005, 54–55).

A grave in the cemetery of Nocera Umbra (grave 9) instead yielded a shield boss and a sword, as well as a bone comb and a bronze basin, along with a precision scale. This grave, datable to the second half of the 7th century at the latest, contained elements typical of

Langobard burials of males with a low economic status. The fact that the only work tool is a scale, evoking the same situation as the grave in the Langobard cemetery of Hegykő-Mező, makes it possible to theorise that the deceased may have been a person who regularly dealt with precious metals, the exclusive privilege of a merchant or official, as a goldsmith would have had specific work implements (Rupp 2005, 13–15).

In southern Piedmont two different settlement contexts, datable to the early Middle Ages, have yielded materials that make it possible to suggest complex metalworking activities, as confirmed by equipment, semi-finished goods and casting slag, and a large number of finished goods made to be used for breeding livestock, farming and crafts (de Vingo 2011a, 180–182).

A set of instruments (bronze anvil and iron hammers) and artefacts (lead ingots) from random discoveries on the hilltop of Castelvecchio di Peveragno (Cuneo) have been attributed to a blacksmith/goldsmith, based on the fact that these items were discovered next to an artisanal area in an archaeological excavation dated to the late 5th–6th century, with a great deal of casting slag, fragments of soapstone crucibles and Roman materials (glass, mosaic tesserae, coins) intended to be brought back into the production cycle. The implements were composed of a bronze anvil with a squared striking surface that was pointed, which made it possible to use it by setting it on a wooden support, and a set of hammers of different sizes, the two largest ones with a round hole running through them to hold the wooden handle, and the third with a squared hole (Micheletto 1998, 59–60; Micheletto 2007, 172). The latter hammerhead, in particular, can be compared with a similar one found in a blacksmith’s grave in Hérouvillette (grave 10), in northern France, which is datable to the early 6th century (Décaens 1971, 19–20), and the one from Molteno (grave 8), reused a number of times between the 4th and the early 6th centuries (Nobile 1990, 375). The small anvil from Castelvecchio di Peveragno demonstrates interesting similarities with the ones placed in the graves at Brno-Kotlářská, Poysdorf and Grupignano, and a grave at San Gervasio di Centallo in the Cuneo area (Micheletto 2007, 172).

The latter complex is an example of a religious building reconstructed through the initiative of a community in which the Langobard cultural and ethnic component is confirmed not only by certain grave goods but also by the complete anthropological study done on the burials (Bedini – Bartoli – Paglialonga – Severini – Vitiello 1997, 347–350), as it seems that between the second half of the 6th century and the 7th century the cemetery was established for the new community that replaced the ancient landowners in the management of the estate and patronage of the church (Mennella 1993, 220–222; de Vingo 2011b, 277–278).



Fig. 5. Early medieval cemetery of Hérouvillette (Calvados, France), iron-working tools from grave 10 (after Aufleger 1996, 620).

San Gervasio underwent extensive reconstruction work, the patron of which can likely be identified as the person buried in the small northern aisle in a carefully crafted masonry tomb, with the singular deposition of iron utensils between his lower limbs, including a hammer, an instrument with bent tips whose function is unclear, and a small anvil with an oddly elongated shape (Micheletto - Pejrani Baricco 1997, 334-336; Pantò - Pejrani Baricco 2001, 22). While the joint presence of elements is interesting - such as the privileged position of the burial in a place of worship and the deposition of tools, indicating the interpenetration of different factors such as a Christian faith that, by this time, had been profoundly absorbed, and aspects of the German funerary ritual - this also makes it even more difficult to identify the individual, a high-ranking figure who may have been a *magister*, possibly the one who reconstructed the church, or the patron and financial backer of this work (Giostra 2000, 15-16).

Metalworkers - and blacksmiths in particular - enjoyed a privileged position in the Germanic world, as can be deduced not only from ancient Norse sagas

but also Roman-Germanic legislation. These considerations can also encompass the Langobard setting, in which these artisans often appear as freemen involved in property transactions (Micheletto - Pejrani Baricco 1997, 325-316, 334-335; La Salvia - Zagari 2003, 959-960; de Vingo 2012, 318).

As to other testimonies in continental Europe, first of all there is the extraordinary discovery of the cemetery of Hérouvillette (grave 10), where the grave goods - datable to the 6th century - included many weapons as well as a chest containing about a dozen instruments such as punches, goldsmith's tongs, an anvil and woodworking instruments (Aufleger 1996, 620; Steiner 2005, 304-305) (Fig. 5). However, there is also the discovery in Mästermyr (Gotland) of a wooden chest from the Viking era containing 131 instruments, from a scale to moulds for repoussé work, pincers, anvils, saws and scissors for metalworking, similarly associated with woodworking implements (Arwidsson - Berg 1983, 45-47; Tålin Bergmann 1983, 193-196) (Fig. 6).

At Mezoband, in Romania, a 4th-century Gepid grave yielded an important set of metalworking tools: tongs,

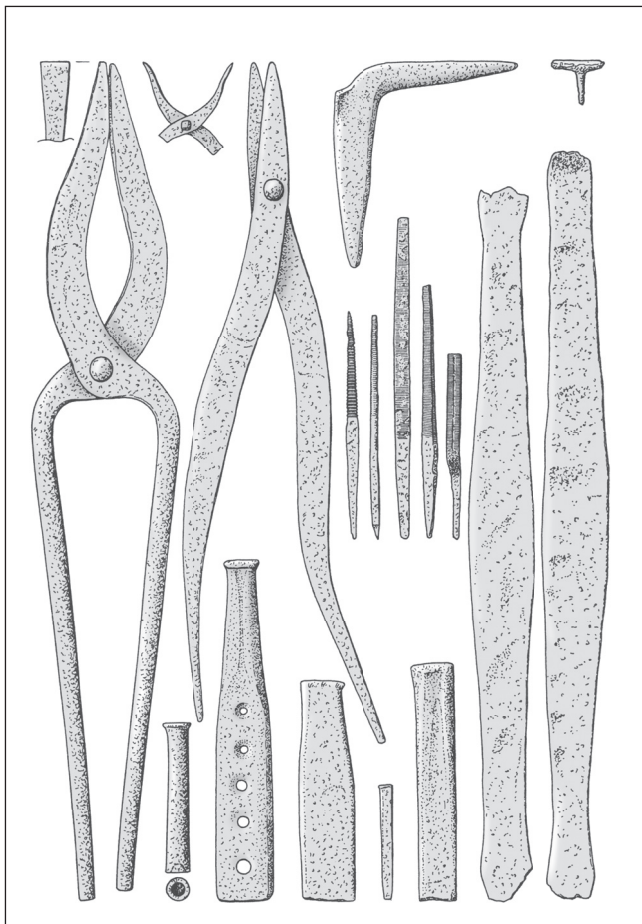


Fig. 6. Mästermyr (Gotland, Sweden), iron metallurgy tools and precision scale (after Roth 1986, 43).

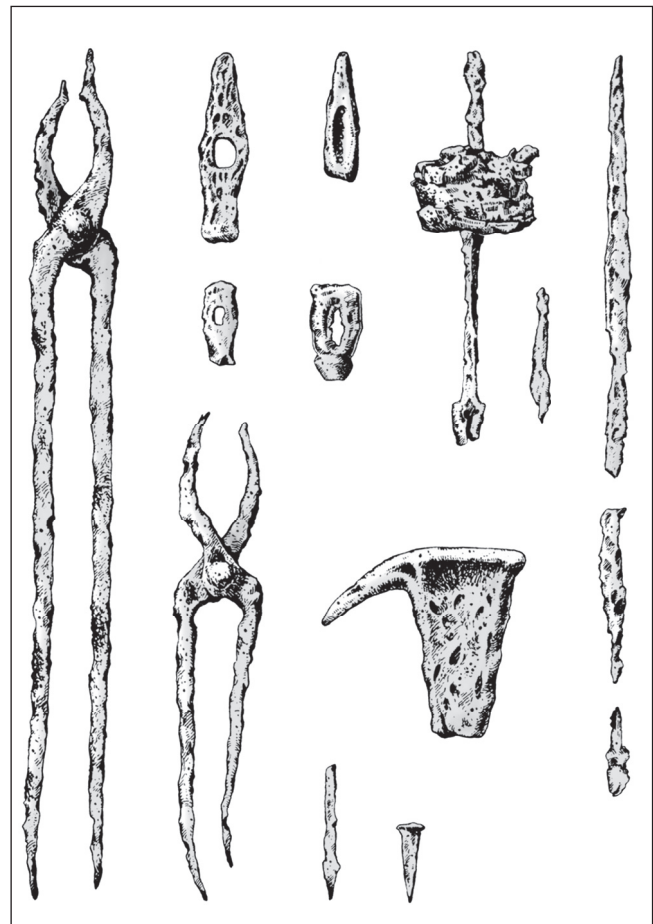


Fig. 7. Mezoband (Romania), iron metallurgy tools from a Gepid grave (after Bóna 1976).



Fig. 8. Beckum (Vestfalia, Germany), burin, pincers, hammer for re-poussé work and precision scale (after Roth 1986, 45).

hammers, a graver, a drill, punches, honing stones, as well as production waste and casting slag. In this case the complete lack of weapons has also been attributed to the fact that the burial was pillaged at some point in the past (Bóna 1976, 48–49) (Fig. 7).

Goldsmithing tools were also placed in burials discovered in Beckum (Westfalen) (Fig. 8) and Brunn am Gebirge (Austria) (Winkelmann 1977, 97–99; Roth 1986, 45–46; Stadler 2008a, 261–262), whereas it seems more likely that the grave at Wallerstätten, near Groß-Gerau, interpreted as that of a goldsmith, instead held the body of a wealthy merchant, as it contained only a scale with a bronze Byzantine weight, a small crucible and a gold ingot, as well as numerous weapons (Aulfleger 1996, 618–619). Lastly, a grave at the cemetery of

Marktobersdorf (grave 34) held the body of a blacksmith who must mainly have produced nails (Roth 1986, 45–46).

In all of the examples described here the common denominator is the dating of the burials that yielded metalworking tools: as a rule, their time span, covering the 6th century, does not go beyond the year 600. The reason for this may be the later integration of Germanic artisans in the local production system, or at least in the changed organisation of labour, although there is no evidence supporting the latter hypothesis (Giostra 2000, 16).

The rarity of burials with work instruments suggests the great worth of the individual tools and thus their limited inclusion in burials (Christlein 1966, 40). In reality, the concept of hoarding valuable objects must have arisen in the 7th century and, along with other phenomena such as Christianisation, must have altered traditional funerary customs, initially leading to the replacement of more precious objects with less expensive artefacts, followed by the reduction and, ultimately, the disappearance of grave goods (La Rocca 1989, 88). Previously, however, death – one of the most significant moments in the life of the community – had demanded the use of the most prestigious and evocative personal items in rituals with a social and religious value so intense that it justified the loss of material goods, as demonstrated by the jewellery and luxury goods often found in these burials (La Rocca 1998, 79–80).

If this could be confirmed, we could argue that the tools did not represent personal property but must have pertained to a production centre, the *magister* who coordinated the production activities or the person who employed the workers, a bond witnessed by several Germanic laws. Graves with a particularly rich array of instruments for working various materials and accompanied by weapons could instead pertain to *magistri* with multiple interests who were free and enjoyed a high economic status, or perhaps – though this is pure conjecture – owners or figures responsible for overseeing and managing production centres (de Vingo 2012, 319–320). In any event, there must have been free and independent craftsmen such as the one from Poysdorf, armed with a shield, and the one from Castel Trosino who fulfilled the needs of the local community. Though limited and, at times, not very eloquent, these cases nevertheless paint a rather varied picture, but they do not contribute decisively to defining the legal status of craftsmen in the early Middle Ages – regardless of which some enjoyed good economic status – nor to reconstructing the crafts organisation and possible specialisations, and only allow us to distinguish blacksmiths from those who worked precious metals (de Vingo 2012, 319–320).

1. The discovery of farming instruments in the 'Regnum Langobardorum maior'

Few Langobard farming implements have been found in Italy: despite the difficulty in recognising rural contexts pertaining to the 'Langobard culture' and the fact that these artefacts are not always easy to identify, the variety of technical, social and economic aspects tied to agricultural tools and the presence of wood in ancient farming tools help us understand the little information that is available. The paucity of findings in relation to factors that influence the type (from climate to technique and the nature of the soil), use and changes of farming tools makes it rather difficult

to structure a comprehensive archaeological study, as opposed to the detailed iconographic and documentary studies examining medieval agricultural implements (Brunner 1995, 21-40). Moreover, we know from iconographic and documentary sources that wooden farming implements were quite numerous in the Middle Ages and for some of them we find a gradual transition from wood to iron, going through an intermediate phase in which the blade - still made of wood - was reinforced with a metal tip (La Salvia - Zagari 2003, 968-969).

The period between Late Antiquity and the early Middle Ages is clearly a key moment for understanding the medieval 'farming culture': the wealth of traditions and

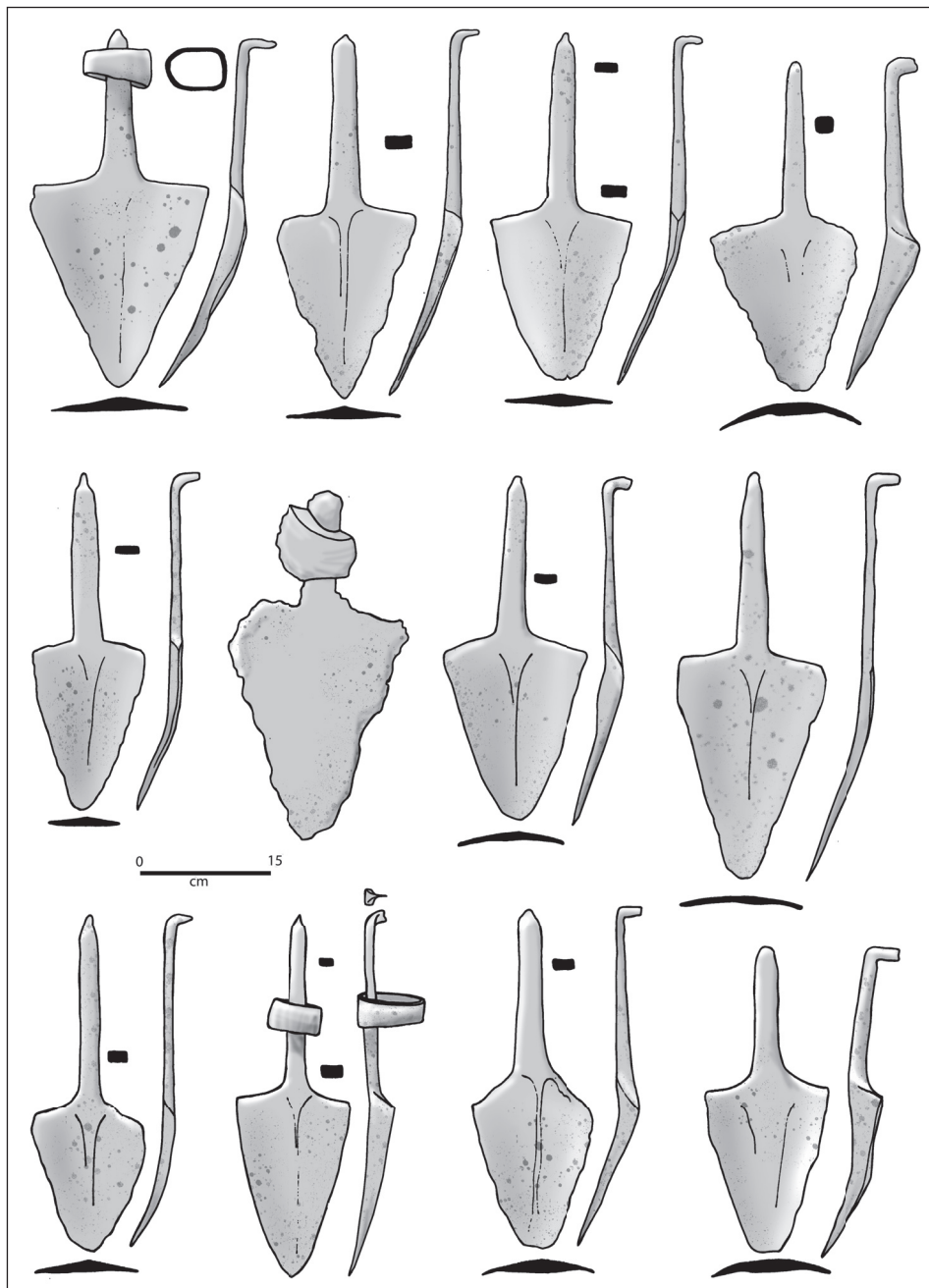


Fig. 9. 'Speerförmige' B3 ploughshares (after Henning 1987, plate 24).

knowledge of the Roman world was preserved in part, but at the same time it was also overhauled, extensively in some cases. Moreover, there is a widespread idea that monasticism played an important role in the preservation and technological transfer of agricultural know-how from the Roman to the medieval world, above all in areas in which cities faced difficulties (or never played a significant role in the first place) (Brunner 1995, 33–34).

Furthermore, to delineate the morphological characteristics, uses and cultural-economic role of agricultural implements we must also consider other elements. In particular, the way in which the metal blade was attached to the wooden support tends to be overlooked, yet it shows interesting ties to the way these instruments were used. The places and contexts in which these artefacts were discovered instead allow us to ascertain the relationship between given settlements and certain types of agricultural instruments, and they thus provide elements that can help reconstruct the spaces and methods of conservation of such tools in each settlement (Zagari – La Salvia 2001, 863–886).

Fifteen ploughshares of the early Middle Ages from the Italian peninsula have been reported from contexts that present ties with the Langobard material culture. They are iron artefacts with a triangular blade and a long flattened rod with a rectangular cross-section, of the ‘spear-shaped’ or ‘Speerförmige B’ type, the origins of which have been sought in the Celtic cultural sphere, but with parallels in the development of agricultural instruments documented archaeologically in central and eastern Europe between Late Antiquity and the period corresponding to the ‘Great Migration’ (La Salvia – Zagari 2003, 973–974; Zagari 2005, 123; La Salvia 2011a, 230–234; 2011b, 81–83). Within this type, J. Henning has identified three versions: B1 (2nd–3rd

century), the ‘spoon-shaped’ B2, and B3, with an ‘overturned pyramid’ shape. B2 was used on wooden supports in the plains of the southern Danube in contexts ascribable to the native substrate of Dacia between the 2nd and 4th centuries, while B3 spread in these areas between the 5th and 6th centuries (Henning 1987, 58–59; La Salvia – Zagari 2003, 975–979; Zagari 2005, 123–125; Vitljanov 2007, 395–396) (Fig. 9).

Of the fifteen ploughshares from the Italian peninsula (‘Speerförmige’ B3), six have been identified in the Piedmont village of Belmonte (Scafile 1972, 28; Forri 1983, 77–78, plate LXXIV.7a; Pejrani Baricco 1990a, 344–345; Micheletto – Pejrani Baricco 1997, 318–325; La Salvia – Zagari 2003, 960–961; Zagari 2005, 125–126; Pejrani Baricco 2007a, 172; La Salvia 2009, 33; de Vingo 2011a, 180) and four in an early medieval storeroom at the base of the north slope of the hill of Casteirolo in Val Bormida to the west of Savona (Palazzi – Parodi 2013, 36). Individual examples come from Turin–Carignano, Parma and Masegra (but ascribed to the late Middle Ages) (Zagari 2005, 123), whereas of the latter two, the one at the Civic Museum in Tortona was found in this area in 1909, though there is no indication as to provenance (Crosetto 2007, 221–22), and the other is at the Antiquarium in Castelseprio (de Vingo 2013, 559).

The agricultural tools found at Belmonte include six ploughshares as well as three pickaxe-hoes, a pickaxe, a spud, a spade, a shovel and two billhooks made of iron (Zagari – La Salvia 2001, 970–971). The first three pickaxe-hoes (Zagari Type 1) present two narrow opposed and perpendicular cutting edges, and a central eye to house the handle (Scafile 1972, 28, fig. 3; Pejrani Baricco 1990b, 345; Zagari 2005, 114; Pejrani Baricco 2007d, 173) (Fig. 10). This implement is suitable for mining and for breaking up uneven and rocky ground, and can be compared to a specimen from Villa Clelia

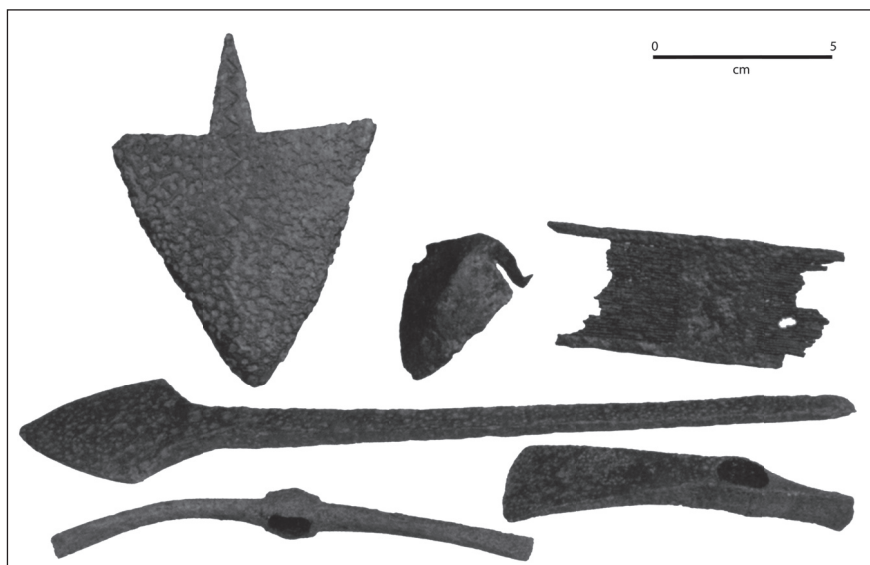


Fig. 10. Early medieval village of Belmonte (Turin, Italy), farming tools (after Pejrani Baricco 2007d, 173).

datable to the 4th century (Baruzzi 1978, 424, plate I.10).

The fourth is referable to a multipurpose pickaxe (Zagari Type 2), used to till land and remove stones or to lift roots; it has two opposed and perpendicular cutting edges, with a clearly prevalent extension of the horizontal blade at a right angle with respect to the handle housed in the eye (Scafile 1971, 46, plate II, 2, 4; Pejrani Baricco 1990c, 345–346; Zagari 2005, 114; Pejrani Baricco 2007, 173e). This artefact can be compared to equipment from the Noric–Pannonian area, generally datable to the centuries of the Roman Empire (Pohanka 1986, 79, plate 15.65), and from Bologna–Villa Clelia in a 6th-century context, where it was interpreted as a hatchet rather than a hoe (Baruzzi 1978, 424 plate I.3).

The spud or small hoe with a triangular blade has a shank ending in a 'hook' in order to fasten it to a wooden handle by tying it or using a metal band. Based on the slightly acute angle of the shank with respect to the blade, it is possible to reconstruct the angle of the handle, which favoured the ergonomic use of the implement (Scafile 1972, 30, fig. 13; Pejrani Baricco 1990d, 346; Pejrani Baricco 2007c, 173). It is interesting to observe that this type of implement, very commonly used to cultivate gardens and not subject to significant typological evolutions with regard to dating, presents a distinctive system for attaching the handle with respect to the usual 'eye' housing to insert the handle (White 1967, 43–47).

The spade has an almost flat triangular blade with a shank to fasten the wooden handle; the shank is slightly bent into a hook at one end. The median axis of the blade and shank has an incised 'zigzag' decoration that is quite unusual for an agricultural tool (Scafile 1972, 28, fig. 2; Pejrani Baricco 1990g, 347; 2007b, 173). The distinctiveness of this object – which shares the unique mounting system with other implements from Belmonte – represents a different technical and cultural tradition with respect to from the Roman-Mediterranean one, which can be traced to Langobard technical expertise (La Salvia – Zagari 2003, 972–973).

The shovel presents a rounded and concave shape that is worn on the left side; the tube to insert the wooden handle creates an obtuse angle with the blade, with a hole to insert the fastening nail. The angle of the tube determines the inclined position of the handle, a distinctive element of shovels with respect to spades (Scafile 1972, 28, fig. 10; Pejrani Baricco 1990h, 347). Some of the formal characteristics and the small dimensions correspond to those of a Roman shovel from Saalburg in Austria (White 1967, 28–31).

The agricultural tools from Belmonte also include two small fragmentary billhooks made of iron: one has



Fig. 11. Medieval fresco in the collegiate church of San Isidoro (León, Spain) with a scene of grapevine pruning (after Bango Torviso 2008, 155).

a rectangular shank and holes for attaching the wooden handle (Scafile 1972, 28–30, fig. 11; Pejrani Baricco 1990e, 346–347), and the other has a short triangular shank in order to insert a wooden handle using pressure (Scafile 1972, 28, fig. 9; Pejrani Baricco 1990f, 347). Although only a minimal part of the blades has been preserved, we can theorise that, given their small size, they must have been used for pruning vineyards or orchards, and harvesting grapes and vegetables (White 1967, 85–97) (Fig. 11).

The material from Casteirolo includes not only ploughshares (4), ploughshare-fasteners (11) and an anvil made of iron (very similar to the one from grave 224 at Leno–Porzano), but also a two-tanged hoe that in the Roman era – two types were identified – was included in the class of hoes and mattocks, equipment used to break up very hard soil or clods of earth and thus facilitate ploughing. A comparison can be made with the material found in the well-deposit of Spilamberto 1, dated between the 6th century and the first half of the following century, although in this case the two tangs have square ends while those on the Casteirolo two-tanged hoe are triangular (Zagari 2005, 116) (Fig. 12).

From the village of Castelvecchio di Peveragno, in addition to the known blacksmith-goldsmith tools, two hoe blades were also found, likely used to work



Fig. 12. Early medieval storeroom in Casteirollo (Savona, Italy), farming tools (after Palazzi - Parodi 2005, 37).

light soils or earth up plants. One is triangular, with a curvilinear profile ending in an accentuated point and with a subcircular housing for the handle; the other has a heavy quadrangular blade, rounded upper corners and a round hole to insert a wooden handle (Micheletto 1996, 124). Of the two hoes indicated here, only the first one resembles a blade found among the material from the well-deposit of Spilamberto 1 and dated between the 5th century and the first half of the 7th (Zagari 2005, 116-117).

The 'spear-shaped' ploughshares allow us to make several suggestions about the types of handles that were used and consequently about how these instruments were employed. Among the various solutions available to make an individual agricultural tool operative, the most useful was indubitably the eye, regardless of the chronology, the instrument and the place of discovery, because it was a practical way to connect the end and the handle of each implement to permit optimum use (Zagari - La Salvia 2001, 875-876).

In the case of the ploughshare, connection with the plough was guaranteed in the types from the Mediterranean area - in other words, for the 'spade-shaped' and 'dagger-shaped' types - by the presence of metal

tabs. For the specimens found in northern Italy, which do not have a cavity or metal tabs, we can imagine that the long rod with which they were fitted must have been attached with ropes or iron bands held in place with nails or pins (Zagari 2005, 124-125).

Considering the position and degree of inclination of the ploughshare, this mounting system must have been less efficient than the 'sleeve' type and may attest to the influences of a technical-cultural tradition other than the Roman-Mediterranean one. Furthermore, the presence of a shank on the spud and spade found at Belmonte but its absence on the two hoes from Castelvecchio and the pickaxe from Casteirollo - all dated between the 5th and 7th centuries - testifies that there was not a uniform farming culture in early medieval villages and that there were also significant differences in how the individual implements were used.

With regard to the spud from Belmonte, the presence of a different cultural tradition seems more evident: the traditional system for mounting the handle - by soaking the wooden handle in water to make it swell or inserting a wooden wedge into a slit at the extremity - was replaced by a metal band or ring (Zagari - La Salvia 2001, 972-973).

2. The discovery of agricultural instruments in the eastern Merovingian areas

A 'spear-shaped' or 'Speerförmige' ploughshare is reported among the agricultural equipment datable to the Imperial Age from Noricum and Pannonia, regions in which the Celtic substrate seems to have held out against Romanisation (*Pohanka 1986*, 36–38). It is a ploughshare (1st century AD) discovered in Bregenz in 1906, measuring about 76 cm in length, while the width of the blade is 13.6 cm. The dimensions and morphology of this specimen closely resemble those of analogous Italian artefacts. Furthermore, its discovery site seems to coincide with Roman Brigantium on Lake Constance, in the province of Raetia, which some think is where the wheeled plough mentioned by Pliny originated (*La Salvia – Zagari 2003*, 973–974; *Zagari 2005*, 124).

The currency of this type of ploughshare in *Raetia* between the 1st and 4th centuries is confirmed by the presence of 'spear-shaped' specimens in the southern part of the west bank of the Danube – along with coulters with a very highly developed rod – as a result of the symbiosis between the Late Antique and Celtic-Germanic traditions during the period of the 'Great Migrations' (*Henning 1986*, 129–130).

Similar ploughshares, identified as 'Stielschäftung B1', have also been documented in the south-eastern areas along the course of the Danube (*Fig. 13*). In addition to these, there are also types such as 'Tullenschäftung A' (in use until the 5th–7th century) (*Fig. 14*) and 'Pflugschar mit tüllenartigem Stiel C1' (*Fig. 15*), 'spade-shaped' or 'foliate' ploughshares that share the presence of the handle mounted with bent tabs, although only the first two ('Tullenschäftung A' and 'Stielschäftung B') guaranteed deeper ploughing (*Henning 1987*, 60).

A ploughshare found in a group of tools concealed in the trench surrounding the Roman fort of Osterburken, on the *limes* between Würzburg and Heilbronn in central Germany (Baden-Württemberg), may be set in relation to an asymmetrical plough (*Henning 1987*, 49–51). This deposit, originally thought to have been hidden by a Roman blacksmith during the Alamannic raids of the 4th century, has recently been dated to the 5th century and is considered part of the tools of an Alamannic farm. Its form seems to be an intermediate solution between the older Roman examples and the later ones from the early Middle Ages, although the discovery of coulters in this same deposit seems to confirm the presence of the plough that turns over clods of earth (*Brunner 1995*, 38).

In 1936 three other 'hoe-shaped' ploughshares were found in central-southern Germany. The first came from a 6th-century grave in Naumburg (Saxony-An-

halt), on the eastern edge of the city, where there were warehouses datable to the Roman period. There are no precise indications as to the exact provenance of the other two. The first of the latter has a more pointed and tapered blade, while in the second case the right side shows greater wear (*Mildenberger 1951*, 61–64; *Schmidt 1961*, 145).

In 1936 a set of 68 iron objects was identified in the western part of the town of Kolín (central Bohemia), in what is now the Czech Republic, and attributed to the 'Final La Tène' period. The objects differ and include artefacts pertaining to distinct milieus: domestic, military, artisanal and rural. In particular, the agricultural tools – dated to the 1st century BC – present signs of wear and include ploughshares, hoes, a billhook and a scythe with its ring fastener for a wooden handle. Based on the composition of the deposit, it has been supposed that the artefacts reflect the main occupations of the local population and that they were concealed during the complex period of the collapse of Celtic domination in the Bohemian region and the events that led to the area's gradual occupation by Germanic tribal groups at the start of the pre-Christian period (*Martin 1997*, 132).

There are very few Type C specimens and they only appear in south-eastern Europe; they are datable to the early Imperial Age, whereas for the 5th–6th century they are also documented along the southern course of the Danube, where neither asymmetrical nor early medieval types have been reported (*Henning 1987*, 60).

In general, ploughshares from central-eastern Europe are smaller and shaped differently than those from the central-western areas: the blade is smaller, it is less triangular in shape, and the rod ends in a point and is often bent to the outside at a right angle, unlike the specimens from Belmonte, which seem to have a rectilinear extremity that is only slightly arched. The overall length is between 27 and 54 cm; the maximum width of the blade ranges from 5 to 8.5 cm for Type B1 and 6–12 cm for B2.

The three types of ploughshares documented in south-east Europe – despite several differences with respect to the 'spear-shaped' specimens from northern Italy and central Europe – seem to have a common original prototype, although after appearing in the 1st century in the areas along the borders between the ancient provinces of Moesia Inferior and Thrace, they disappeared during the early Middle Ages, replaced mainly by Type A ploughshares (*Henning 1985*).

The oldest finding dates back to the 4th century BC and is from a grave in Kolojanovo, Bulgaria, despite more widespread circulation during the 2nd–3rd century along the lower course of the Danube

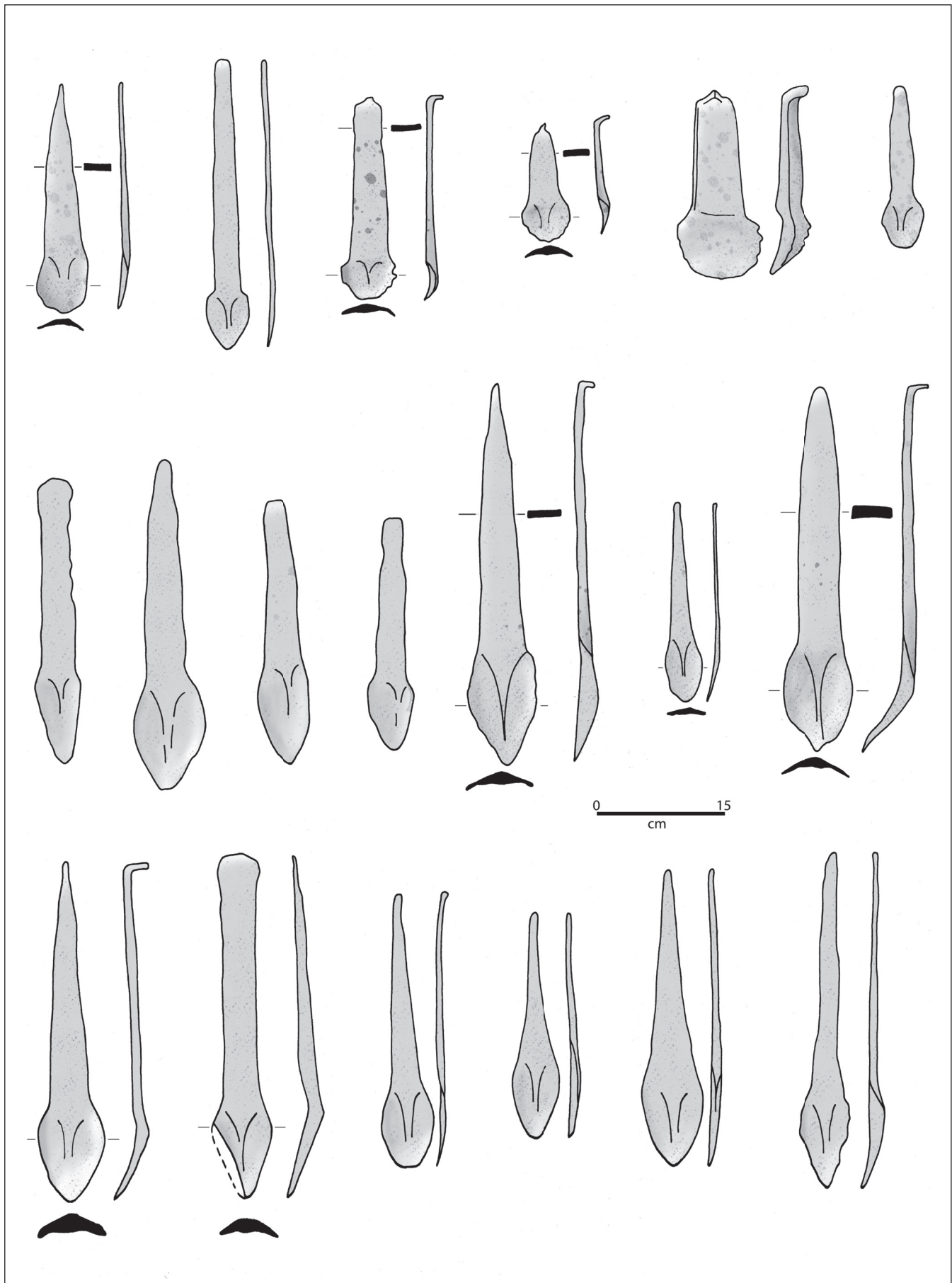


Fig. 13. 'Stielschäftung' B1 ploughshares (after Henning 1987, plate 21).

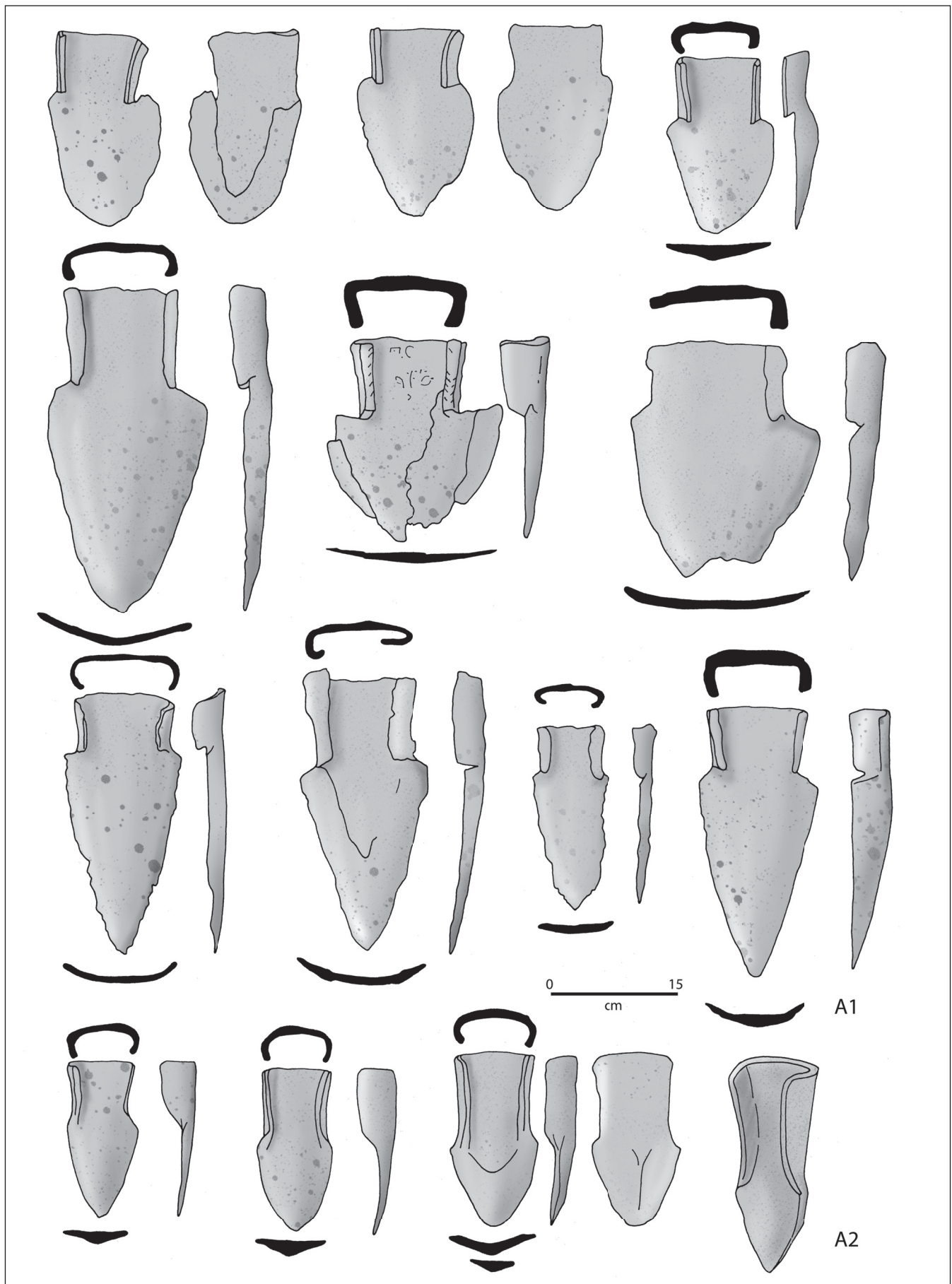


Fig. 14. 'Tullenschäftung' A1-A2 ploughshares (after Henning 1987, plate 18).

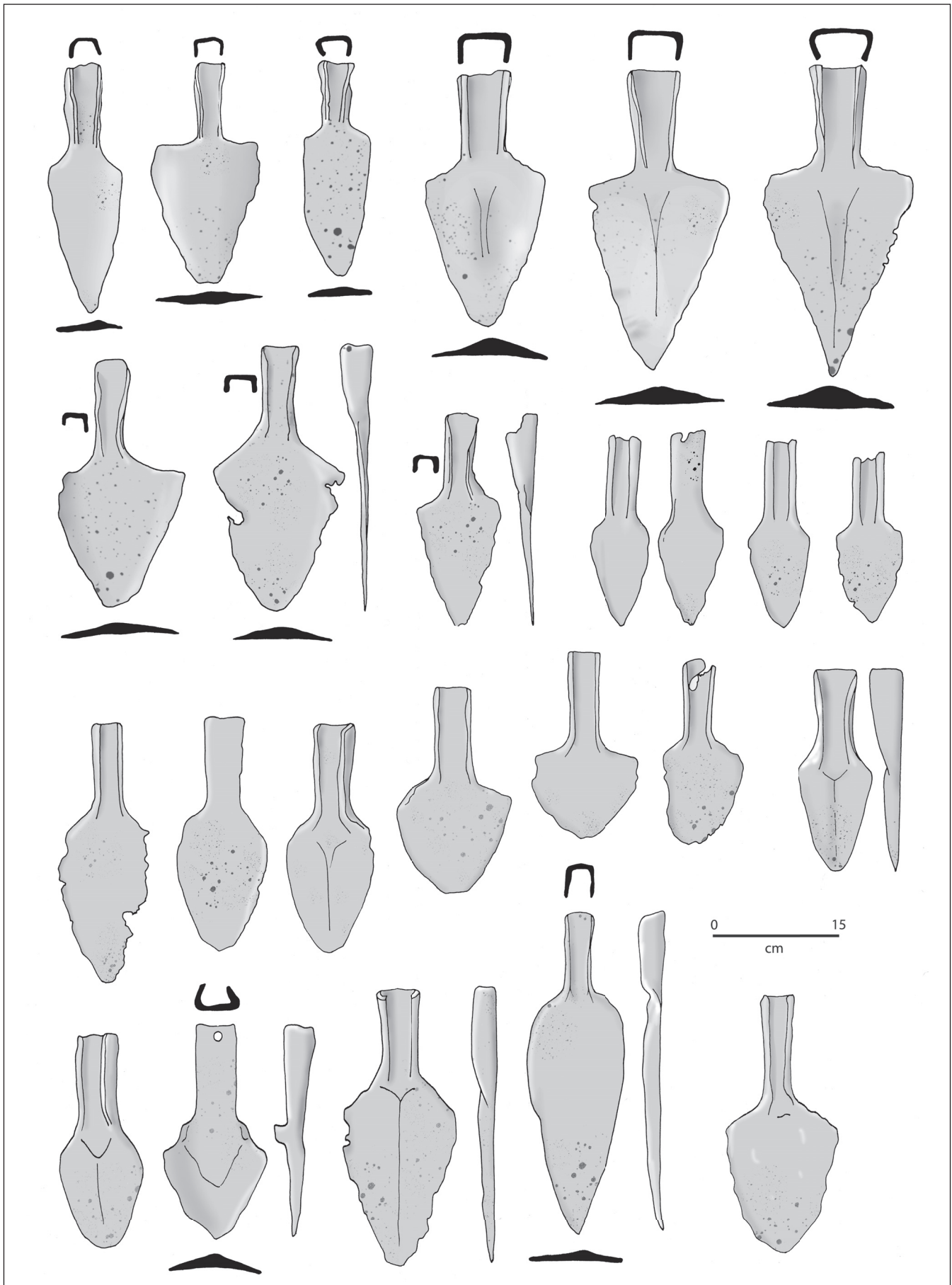


Fig. 15. 'Pflugschar mit tüllenartigem Stiel' C1 ploughshares (after Henning 1987, plate 27).

in the Carpathian Basin, in urban and rural settlement contexts and cemeteries located close to navigable rivers (Henning 1987, 58). Therefore, the spread of these ploughshares seems to have followed the course of the Danube, in areas in which settlements founded by the Romans (Keszthely, Scrabantia–Sopron, Zamardi, Caricin Grad, Sisak) show long settlement continuity (La Salvia – Zagari 2003, 976–977).

Between the 1st and 4th centuries, B1 ‘spear-shaped’ ploughshares only sporadically characterised the northern areas of the Balkan course of the Danube and the only findings of this type involve three sites, one of which has been identified as a Geto-Dacian village from the 2nd–3rd century (Henning 1987, 61–62).

The same territorial sector is also the location of the findings of B2 ploughshares and sporadic examples of the traditional ‘hoe-shaped’ type (A1, A2, A3). However, while along the northern part of the Danube the B2 types were found in Roman villas from the 2nd–3rd century as well as Dacian and Geto-Dacian settlements, some of which fortified, along the southern part they are documented only at Roman villas or *municipia* (La Salvia – Zagari 2003, 977).

Only two specimens of the Type B3 ploughshare, for the period between the 1st and 4th centuries, have been identified in Transylvania and the southern sector of the Danube. There is a decrease in findings of Type B ploughshares datable between the 5th and the 7th centuries, and with the exception of just one B3 specimen, they were found in the areas along the southern Danube. Type B1 appears in two settlements (one of which Roman), while Type B2 was found in three different contexts (one coincides with the Roman one indicated for B1 but which also yielded a B3 specimen), while Type B3 has frequently been found in Roman villas, *municipia* constantly occupied in Late Antiquity and fortified contexts (La Salvia – Zagari 2003, 978).

The large number of Type B ploughshares between the 8th and 10th centuries drops off to just two findings of B2 specimens: the first north of the Danube and the second south of it, always in association with Type A ploughshares. Therefore, this type shows fairly extensive circulation in Bulgarian territory, where a diversification of the three subtypes can be observed over the course of the three periods indicated here. The B1 variant was never very widespread in central and eastern Europe except between the 1st and 4th centuries, while as of the following century it is no longer reported. Type B2 has yielded more numerous findings between the 1st and 4th centuries, and Type B3 shows a strong presence between the 5th and 7th centuries (La Salvia – Zagari 2003, 978).

3. Central and eastern Europe as an area of technological and production exchanges

The fundamental division among the various types of ploughs distinguishes between symmetrical models – which move the soil but without turning over the clods – and the asymmetrical ones, which go in depth and turn over the clods (White 1962, 39–57; Forni 1991, 361–364; 1996, 102–106). The asymmetrical plough is characterised by the presence of a ploughshare with one half that is generally more developed and by a mouldboard, a slanted element designed to overturn the clods completely. In addition to these components, a large blade (couler) was often added, positioned vertically in front of the ploughshare, which favoured the tool’s carving action (Zagari – La Salvia 2001, 882).

Scholars have now confirmed the theory according to which the Romans only had one type of plough, the symmetrical one suited for dry and uneven Mediterranean soil, whereas the asymmetrical model was allegedly imported to Italy in the early Middle Ages from central-northern Europe as well as the areas along the northern course of the Danube, where the technological tradition of the Celts and the Scythians was re-elaborated by the Roman-Germanic population (La Salvia – Zagari 2003, 983; Henning 2009, 158).

Thanks to the stimulus of the Roman economic structure – aimed at increasing cereal production in the ‘imperial breadbaskets’ of the eastern provinces (Pannonia, Dacia, Moesia and Thrace) – the ancient symmetrical plough of the Mediterranean tradition seems to have undergone profound technical transformations (Henning 1987, 48–61; 2009, 158–159).

Written sources from the early Middle Ages do not attest to the types of ploughs used in Italy because the documents mention *plovum*, *aratrum* and *carruca* without any indications as to the differences or similarities among these models. Consequently, we do not have enough data to reconstruct the form and function of these models (Mastrelli 1974, 262; Baruzzi 1978, 163; Forni 1996, 96–100; Zagari – La Salvia 2001, 883–884). Furthermore, it is probable that it was only over time that the symmetrical plough was fitted with all its components (mouldboard, asymmetrical ploughshare and couler) and it is likely that not only must there have been intermediate types between the symmetrical and the asymmetrical models, but also simpler ploughing equipment, in some cases fitted with a couler (Baruzzi 1978, 163–164; Cherubini 1981, 296–303).

Some of these written medieval documents that examine the situation in the central-northern part of the Italian peninsula mention various types of complex ploughs that, in some cases, became typical of certain regions, where they continued to be used until the ear-

ly 20th century (*Cortonesi - Pasquali - Piccinni 2002*, 204-205).

The introduction of the asymmetrical plough not only acted as an 'extraordinary multiplier of economic and thus cultural development' (*Forni 1989*, 313), but it also led to profound social changes because it implied rather substantial production costs and required a draught animal or a team of two animals (*Cortonesi 1988*, 115). Consequently, the need to amortise this type of investment encouraged the initiative of a group of farmers - and no longer the individual farmer - who evidently participated with equal shares in order to purchase and maintain it. Furthermore, the heavier the plough or the more difficult the land to be broken up, and the more oxen that had to be yoked. The sources tell us that cows and buffaloes (Marche, Tuscany and Latium) and mules, donkeys and horses (Apulia) were used only sporadically to prepare the land for sowing (*Cortonesi - Pasquali - Piccinni 2002*, 205).

One of the aspects that provides a better understanding of the organisational modes of rural medieval societies is the technique of manuring, which was unknown among Germanic populations. If practised regularly and methodically, however, it could guarantee a much higher agricultural yield and thus determine the affirmation of one settlement over another. It would be very important to know the number of livestock fed during the winter months and the period in which they were kept in the sheds, essential information in order to calculate (albeit completely hypothetically) the amount of manure that could be obtained (*La Salvia - Zagari 2003*, 985).

To improve ploughing on uneven ground, preliminary operations could be conducted with complementary equipment such as the spade, the mattock, the hoe and the two-tanged hoe, because eliminating weeds and stones allowed the roots of cereals and legumes to breathe, which made it possible to offset - at least in part - the lack of adequate manuring, due to the backwardness of animal husbandry with stabling in Italy in the late Middle Ages. Furthermore, animal or plant fertiliser could be distributed when the land was hoed. The number of ploughings changed according to the soil, the type of equipment, the workforce and local customs (*Cortonesi - Pasquali - Piccinni 2002*, 191-270).

The central European origins of the asymmetrical plough seem to be confirmed by its technical characteristics: the difficulty steering this type of plough made it suitable to be used on long narrow plots, which occur frequently north of the Alps and are considerably different than the 'square' fields typical of the Mediterranean sector. The latter were formed by primitive, light and symmetrical ploughs, which had to criss-cross the land to avoid leaving areas untouched after surface ploughing (*La Salvia - Zagari 2003*, 986).

By examining and interpreting traces left on the ground, the study of the agricultural techniques and instruments used in antiquity counts numerous examples in central and northern Europe, and the British Isles, characterised by excessive technological determinism (*Barger 1938*, 411; *White 1967*, 41-57).

In 1895 A. Meitzen was the first to trace the form of the plough to important factors tied to medieval cultivation techniques. It was not until 1931, however, that M. Bloch suggested that the use of the 'hook' plough was directly related to the square shape of the plots of land because the same surface had to be crossed several times - to make sure not to leave unploughed areas and to avoid losing the beneficial effects of the moisture and minerals present in the subsoil - and this type of plough offered the farmer the best points of reference to obtain homogeneous and rational ploughing.

Thanks to the use of wheels, a ploughshare, a mouldboard and a coulter, the new type of plough did not need to go over the land twice and this led to an implicit modification of the cultivable surface, which acquired a rectangular shape. The time that was saved was dedicated to tilling new lands - leading to increased agricultural productivity and thus population growth - and perfecting production techniques. In this way, of three agricultural portions, one was prepared with the heavy plough so cereals could be sown, while the other two were left fallow to allow livestock to graze freely and fertilise the land that would be planted the following year.

In 1933, at Twyford Down in the English countryside of Hampshire, ancient traces of rectangular fields and the coulter of a heavy plough were found in a level dated to the 'La Tène III' period: this discovery confirms that agricultural equipment and techniques were introduced in Britannia before the Saxon conquest (*White 1967*, 41-57).

The archaeological findings regarding the introduction of the asymmetrical plough in central Europe between Late Antiquity and the early Middle Ages seem to coincide with a drop in artisanal productivity in urban settings, with significant improvements made to agricultural tools (scythes, spades, billhooks and hoes) that would lead to progressive expansion of cultivable areas and an ensuing increase in production capacity, which in turn required the construction of new granaries between the 3rd and 4th centuries (*Henning 1985*, 303-310; *2009*, 152-153). In this regard, the case of the scythe blades found in Osterburken is significant. Although these types were widespread from the Celtic phase to the Middle Ages, they are considered the result of technological advances applied to agricultural tools that were part of the Roman tradition (*Brunner 1995*, 39-40; *Henning 2009*, 161).

Conclusions

The information presented here confirms the need for an overall reinterpretation of the transition period between Late Antiquity and the early Middle Ages. Indeed, it is no longer possible to suggest a generalised crisis and simple involution of the Roman world as a result of contamination by the 'barbarian' world, because these transformations were already under way during the Imperial Age, particularly as far as agricultural tools and techniques are concerned. In this specific case, the changes made to the plough and the scythe – and secondarily to the manuring technique – between the 3rd and 5th centuries indicate that the early medieval agricultural technology cannot be considered the outcome of the superiority of the classical over the Germanic tradition, but the result of a convergence of different socio-economic milieus that were able to satisfy the needs of a population that was changing significantly and was no longer the same as before (Henning 2009, 163–164).

Unfortunately, two methodological errors continue to be made even now. First of all, differences have always been considered factors of disparity and it was never thought that the geographical diversities of areas with environmental conditions not conducive to agricultural activities (the alpine sector and African provinces) may have encouraged the development of innovative solutions from a technical and organisational standpoint, subsequently introduced as improvements in the general economic system; and that social changes above all involved the middle-upper classes and not the lower-middle classes.

The scenario of San Severino – which would lead to the withdrawal of all Romans from the territory north of the Alps, representing a complete break with the preceding settlement phase – is countered by the continuity of names from the Roman tradition, which were still used in Raetia, Noricum and Pannonia when these provinces must already have been abandoned to their fate. The complete migration of the population recalled by Eugippius supposedly never took place in the ways indicated by the written sources and, if anything, must only have involved the aristocratic component, whereas the rest of the population, and particularly the rural classes, continued to carry out their work (Alföldy 1974, 220–227). The Rhenish-Danubian *limes* never represented an insurmountable barrier and rather than acting as a factor dividing demographic groups that had always been in contact – and thus subject to mutual exchanges and influences – it became a point of convergence and fusion for different cultures (Celtic, Germanic, Roman, Slavic and nomadic).

The evident ties that have been emphasised between certain Mediterranean agricultural instruments

('spear-shaped' ploughshares and the pickaxe-hoe) with analogous artefacts found in eastern Europe, considered the area in which the most interesting technical experiments were conducted, represent food for thought and discussion (*La Salvia - Zagari* 2003, 980).

The pickaxe-hoe blades (Pohanka Type 2a) found in Piedmont at Belmonte and in Emilia at Villa Clelia present two narrow cutting edges that are opposite and perpendicular to each other. Therefore, this type of tool must have been suitable for breaking up land and removing stones from rocky soil, but also for quarrying in mines. The Belmonte artefact is dated between the 5th and 7th centuries and the blades measure 36.5 X 2.7 X 2.8 cm (*Pejrani Baricco* 1990c, 345–346; 2007d, 173), whereas the one from Villa Clelia goes back to the 6th century and measures 30 X 2.8 X 1.5 cm (*Baruzzi* 1978, 421, plate I, 3). These implements are not only quite similar in both size and chronology, but they also have a form and measurements similar to those of an earlier pickaxe-hoe discovered in the Noric-Pannonian area (*White* 1987, 27–28; *Pohanka* 1986, 79, plate 15.65). This observation could indicate that it was not the tools that followed human movements, but that there was a common heritage of experiences, skills and concepts that formed and became consolidated after centuries of continuous contact and cultural exchanges, from which the Roman-Germanic populations also drew (*Menke* 1990, 35–104; *La Salvia* 1998b, 15).

These observations and the possibility of establishing relationships with early medieval utensils, identified in adjacent areas of the European continent, seem to attest to a Germanic influence in the development of the early medieval agricultural tools in which the Langobard component may have served as an element for the transfer of knowledge and technical know-how from continental Europe to the Mediterranean. In this process, the Langobards would not have limited themselves to sharing the leading role but would have contributed decisively, uniting metallurgic expertise with technical and agricultural know-how, thus making a decisive contribution to the formation of the new rural culture of the early Middle Ages (*La Salvia - Zagari* 2003, 983).

Summary

Based on a study of some types of early medieval iron farm tools produced in the eastern Merovingian areas, it can be asserted that such implements were not the products of Mediterranean craftsmen but rather were of allochthonous origin, and specifically central European. Since some of these tools, such as special kinds of iron ploughs, were completely unknown in Italy prior to the Langobard conquest, such an event must be recognised not only as having brought about

important socio-political and territorial transformations but also as having had an even more profound impact on the material culture. To this regard, it is important to consider the *Regnum Langobardorum*, along with the outlying and bordering zones – and Bavaria and Alamannia in particular – with which the kingdom developed an intense cultural and commercial network that included the entire eastern Merovingian sector and of which the Italian peninsula certainly acted as the central junction. Hence, the eastern Merovingian areas cannot be considered simply as an outlying zone of the Frankish world but, on the contrary, must be considered, from an economic and cultural standpoint, a relatively well-defined and uniform geographic space that, between the end of the 6th and 7th centuries, played a central role in the transmission of technological know-how and farm tools from central-northern Europe to the Mediterranean regions.

Résumé

L'analyse de quelques catégories d'objets agricoles en fer du haut Moyen Âge, produits dans les zones mérovingiennes orientales, permet non pas de les attribuer à la tradition artisanale méditerranéenne mais de reconnaître plutôt leur forte ascendance allochtone et, plus précisément, d'Europe centrale. Étant donné que certains de ces instruments, comme dans le cas de formes particulières de charrues en fer, étaient tout à fait méconnus dans la péninsule italique avant la conquête lombarde, il faudrait désormais considérer cet événement comme porteur d'importantes transformations au niveau sociopolitique et territorial mais également au niveau, sans doute plus profond, de l'impact sur la culture matérielle. Il est, à ce propos, important de relier le *Regnum Langobardorum* aux zones limitrophes et contigües – notamment la *Bavaria* et l'*Alamannia* – avec lesquelles ce royaume établit un intense réseau culturel et commercial, qui comprenait tout le secteur mérovingien oriental, et dont la péninsule italique représentait sans aucun doute l'axe central. Les zones mérovingiennes orientales ne sauraient donc être considérées tout simplement comme une zone périphérique du monde franc mais plutôt comme un espace géographique relativement défini et uniforme du point de vue économique et culturel qui joua, entre la fin du VI^e siècle et le VII^e siècle, un rôle fondamental dans la transmission de connaissances technologiques et d'objets agricoles de l'Europe centrale, du nord et orientale vers les régions méditerranéennes.

Zusammenfassung

Die Untersuchung einiger in den östlichen Merowingergebieten hergestellter Kategorien frühmittelal-

terlicher Landwirtschaftsmanufakte aus Eisen gestattet es, sie nicht der mediterranen Handwerkstradition zuzuordnen, vielmehr lässt sich in ihnen eine unleugbare fremdstämmige, und zwar zentraleuropäische Herkunft erkennen. Angesichts der Tatsache, dass manche dieser Werkzeuge, wie im Falle der besonderen Formen eines Eisenpflugs, vor der langobardischen Eroberung auf der italienischen Halbinsel völlig unbekannt waren, erscheint nun eine Betrachtung dieses Ereignisses als Träger nicht nur wichtiger Wandlungen auf sozialpolitischer und territorialer Ebene von Notwendigkeit, sondern auch einer Wandlung bei der Wirkung auf die Materialkultur, wobei diese vielleicht wesentlich tiefer greifend ist. Erforderlich ist diesbezüglich auch die Herstellung einer Verbindung zwischen dem *Regnum Langobardorum* und den Rand- und Grenzgebieten, vor allem Bavaria und Alamannia, mit denen das Reich eine intensive Kultur- und Handelsbeziehung aufbaute, die den gesamten östlichen Merowingerbereich einschloss, wobei die italienische Halbinsel sicherlich den zentralen Knotenpunkt darstellte. Die östlichen Merowingergebiete sind somit nicht einfach nur als Peripherie der fränkischen Welt anzusehen. Im Gegenteil, aus wirtschaftlicher und kultureller Sicht sind sie vielmehr als ein relativ definierter und gleichförmiger geographischer Raum zu betrachten, der in der Zeit zwischen Ende des 6. und dem 8. Jahrhundert eine zentrale Rolle spielte bei der Weitergabe technologischer Kenntnisse und landwirtschaftlicher Manufakte von den zentralnördlichen und östlichen Gebieten Europas an die Regionen des Mittelmeers.

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