

ABSOLUTE DATING OF AVAR AGE BELT SETS USING THE COIN-ASSEMBLAGE METHOD

PÉTER SOMOGYI

In research of the Avar Age, an accepted method for individual, direct dating is by using the Byzantine coins found in graves. The only exception to this has been a study published in the 2008 Yearbook of the Hungarian Academy of Sciences Institute of Archaeology, in which the noted Swiss researcher of the Merovingian Age, Max Martin, presented the so-called coin-assemblage method. He used examples from the Merovingian Age to demonstrate the practical applicability of the method, and then made an attempt to use it on belt sets from the Avar Age. Given that his work was intended to stimulate thought on the subject, and has received no response, its presentation and analysis are still timely.

As early as 1874, Ferenc Pulszky stated the eternal principle: the year of a burial cannot be determined by the earliest year of the minting period of coins found at the burial site, the date of those coins only allows us to conclude that the graves were dug at some point following that year (*terminus post quem*). Generally, it is impossible to determine how many years passed between the year of the coins being minted and the year of their interment in the grave. After a hopeful beginning, direct dating using coins became the norm in research into the Avar Age. József Hampel used a cautious formulation to the effect that a burial or a particular type of object can be dated by the gold coins found in it or with it. Later, the norm became the classical form of direct dating using coins, according to which the coin of a particular emperor found in a burial or with a particular type of object dates that burial or object as being from this or that particular year or set of years. In the best case scenario, researchers have tried and still try to determine this coin-based date on the basis of typo-chronological background information and the condition of the coin in question (freshly minted, worn, or possibly converted for use as jewellery). In the worst cases, they use their intuition, or date the items in question in order to support their working hypotheses, or simply assume that on average, a coin spent 20-30 years in circulation, when calculating the date in a ‘precise’ fashion.¹

I have furnished a detailed discussion of this methodological shortcoming, which has been exacerbated by erroneous or imprecise determination of the years coins were minted, in my history of the research of Byzantine coins found in Avar Age assemblies.² I described the system and types of direct dating using coins, and the attempts made at fine-tuning and developing the method following criticism of the practice—which is based on a belief in the general and precise ‘dating value’ of Byzantine coins found in Avar Age burials—by some researchers of Avar Age archaeology and Byzantine numismatics.³ At that time, I thought that I had not missed any of the scholars who had made material contributions to the issue of absolute dating using coins. It was only more recently, while writing another paper, that I was confronted by the fact that my review of the field had omitted one researcher, Max Martin of Switzerland. In the field of research into the Avar Age, this noted expert on Merovingian-Age archaeology has attempted, uniquely, to date a few types of belt sets using a method other than direct dating with coins, namely the so-called assemblage method.⁴ Looking back, I have no explanation for why this piece of work, which opens novel perspectives in methodology, escaped my attention. Equally perplexing, I have also found in retrospect that Max Martin’s 2008 article has received no response at all from researchers of the Avar Age, which implies that a presentation and analysis of his thought-provoking experiment is still fitting.

¹ SOMOGYI 2011, 171–172, 193.

² SOMOGYI 2011, 191–193. Chapter entitled “Die zwei Grundübel”.

³ SOMOGYI 2011, 214–217.

⁴ MARTIN 2008.

To recap: the first year in which a particular type of coin was minted determines *with certainty* the earliest date before which the grave could not have been dug (*terminus ante quem non*). That date is also the earliest possible date of the digging of the grave (*terminus post quem*). Although the *terminus post quem* “represents a fixed temporal reference for each and every burial, because of the time individual coins have spent in circulation, which cannot really be determined in terms of years, but which certainly varies as evidenced by the various degrees of wear observed on individual pieces of coinage, the actual years in which individual coins were placed in their respective graves are highly uncertain”.⁵ Back in the 1950’s, the German archaeologists studying the Merovingian Age developed a method for reducing the uncertainty resulting from direct dating using individual coins or, more precisely, from our lack of knowledge about the period of time a coin has spent in circulation, in which all the coins from a set of graves belonging to a particular typo-chronological group are used collectively. Max Martin summarised the conditions under which the method can be used, and the corresponding reasons, as follows: “The coins originating from graves belonging to the same typo-chronological group form a so-called coin-assemblage. The most important constituents of a single specific coin-assemblage are the coins that were minted the latest, as the first year of the period in which those were being minted represents the *terminus post quem*, which determines the final date of the typo-chronological group, and also, naturally, the beginning of the next typo-chronological group. Why is that? If a typo-chronological group had existed in the years after

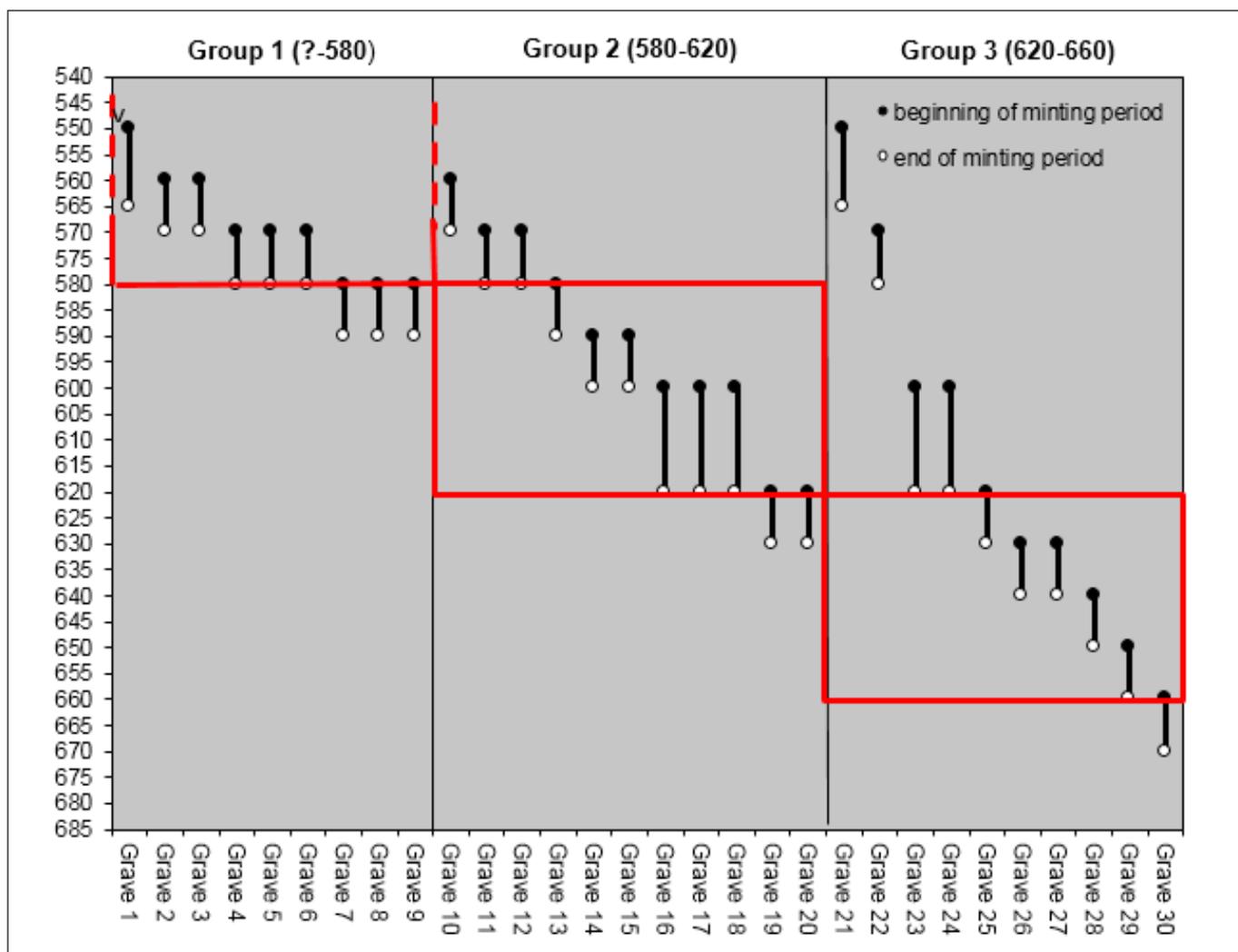


Figure 1: A fictitious and idealised example for the absolute dating of typo-chronological groups using Max Martin’s coin-assemblage method. The upper boundary of the groups is the first year of the period in which the most recent coins were minted.

⁵ MARTIN 2008, 143.

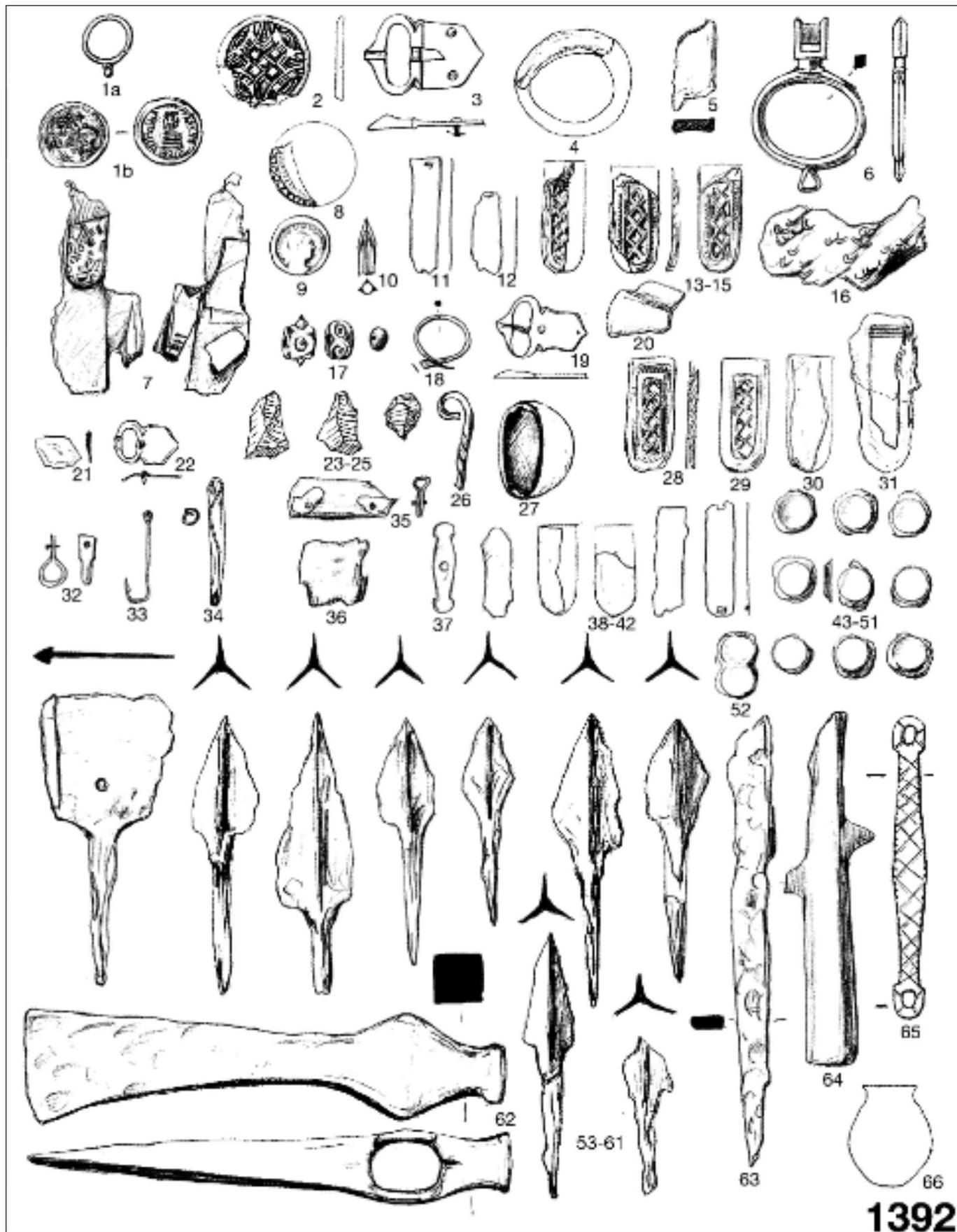


Figure 3: Example of Martin's first group of belt sets. Zamárdi-Rétiföldek, Grave no. 1392. (BÁRDOS-GARAM 209, p. 363, based on Table 160)

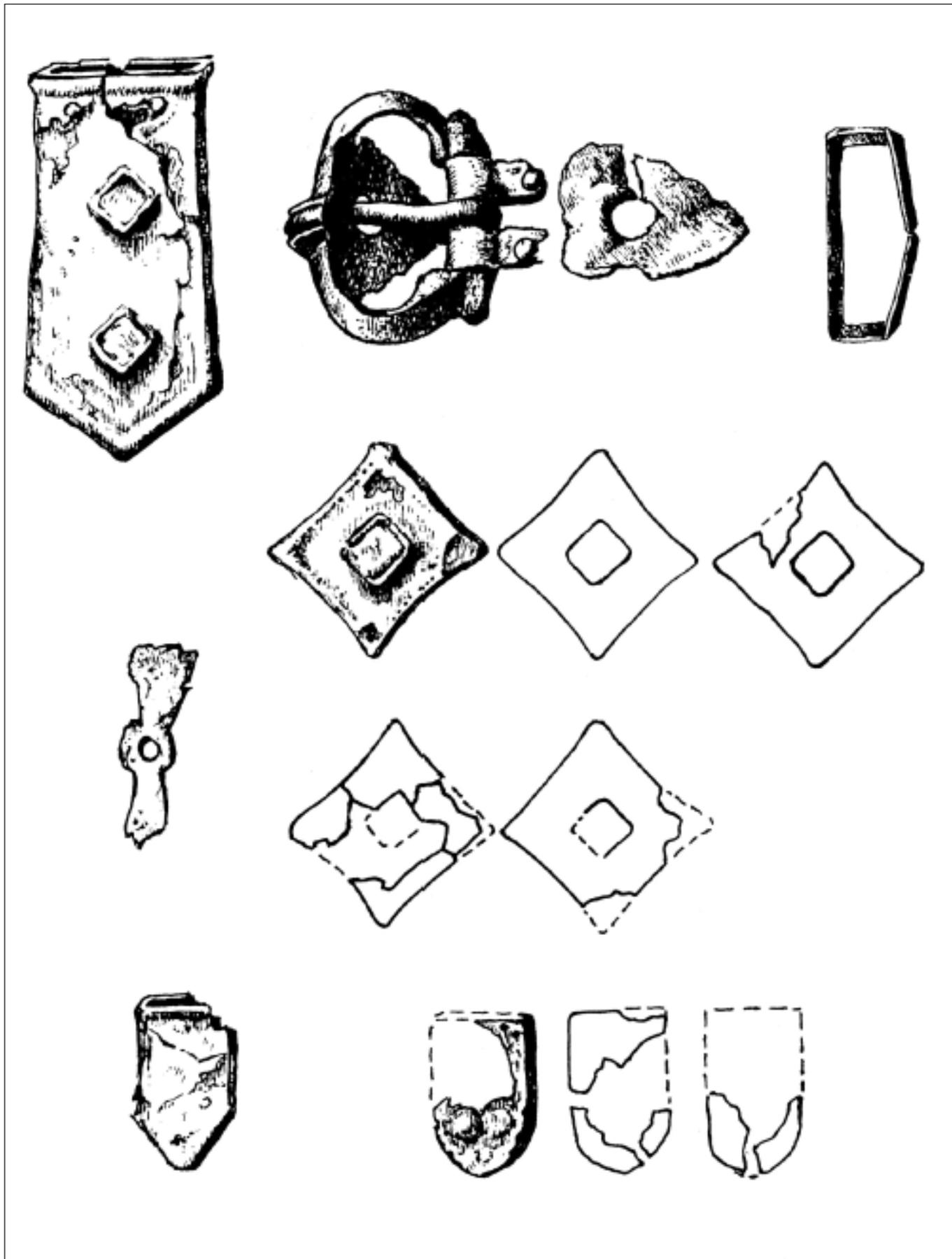


Figure 4: Example of Martin's second group of belt sets. Szeged-Fehértó, Grave no. 29 (SZENTHE 2012, p. 523, based on Figure 2)



Figure 5: Example of Martin's third group of belt sets. Jászapáti, Grave no. 264 (MADARAS 1994, p. 224, based on Table XXXVII)

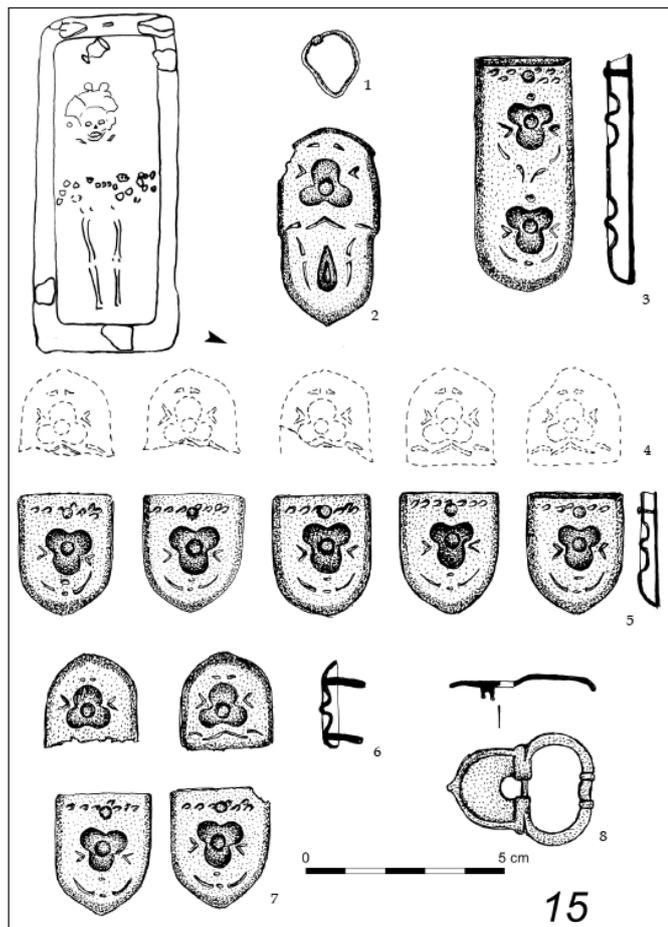


Figure 6: Example of Fönlak-Aradka type belt sets. Keszthely-Fenekpuszta-Horreum, Grave no. 15 (VIDA 2011, p. 430, based on Table 12)

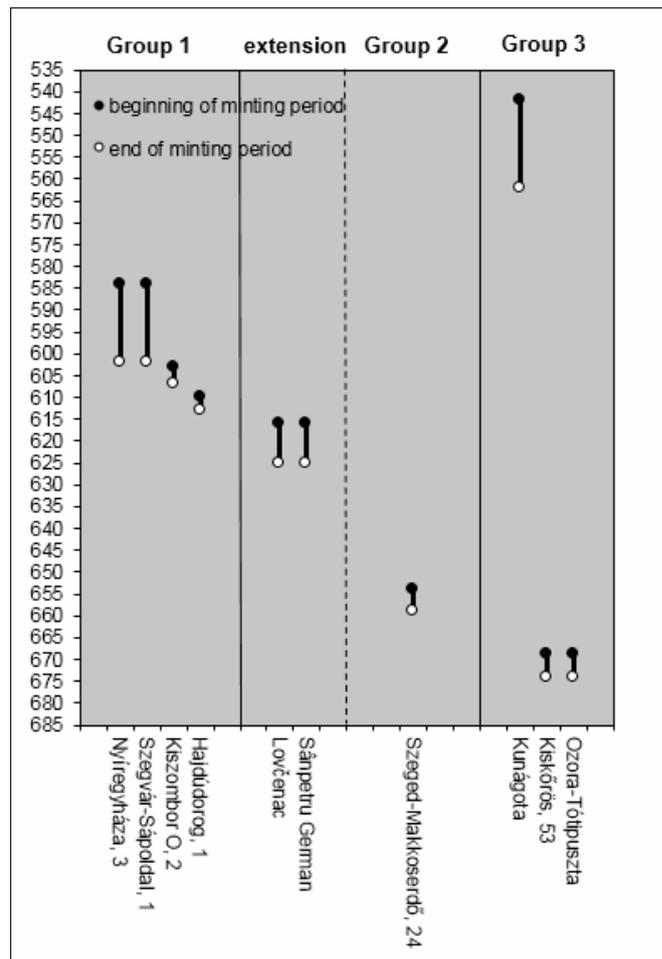


Figure 7: “Coin-assemblages” of Max Martin’s three Avar Age belt set groups

large and several smaller strap ends but without fittings on the belt itself. The plate strap endings generally lack ornamentation and do not form a uniform set with the belt buckles (Szegvár-Sápoldal, Nyíregyháza, Kiszombor O, Hajdúdorog).⁹ The second group (Fig. 4) represents the next phase of development, in which the belts are fitted not only with plain plate strap endings, but also with many square or disc shaped, and always ornamented belt fittings (Szeged-Makkoserdő).¹⁰ Max Martin placed the belt sets consisting of uniformly ornamented belt fittings and strap ends pressed from plate in the third group (Fig. 5), noting that the style of the belt buckles does not match the fittings in that group, either (Kunágota, Ozora-Tótipusztza, Kiskörös).¹¹

Max Martin did not designate the Fönlak-Aradka type horseman’s grave at Németszentpéter (Sânpetru German) with its belt ornamented with plate-pressed fittings (Fig. 6), to any of the above groups. In his view, “they are not original Avar, but Byzantine” fittings, and “because the vocabulary of forms and motifs of the Byzantine-Mediterranean belts with large numbers of fittings became uniform earlier than that of Avar belt sets,” the former cannot be incorporated in the phases of development stipulated for the latter.¹²

In the next step, Max Martin examined the coin-assemblages from the three groups of belt sets distinguished on the basis of structural typology (Fig. 7). Although Martin himself had found that the

⁹ MARTIN 2008, 163–164, Figure 13, nos. 4, 5, 9 and 10.

¹⁰ MARTIN 2008, 164, Figure 13, no. 13.

¹¹ MARTIN 2008, 165, Figure 13, nos. 1, 14 and 16.

¹² MARTIN 2008, 165, Figure 13, no. 12. Max Martin’s classification is based on Éva Garam’s collection of Avar Age graves containing coins, published in 1992, which regrettably failed to include the coin-bearing grave in Gyenesdiás, which had already been published at that point (MARTIN 2008, p. 163, note 59; GARAM 1992). We may assume that the grave in question is not included in Martin’s work, either; although it did contain a belt with fittings.

Németszentpéter belt set was not a part of any of the groups, and he knew nothing about the belt set from the Szeghegy grave—and given that it doesn’t exist, evidently he could not have known anything about it—he still added the *solidi* of Heraclius from those two graves to the coin-assemblage of the first group (616–625). Naturally, Max Martin was aware that such an extension of a coin-assemblage is arbitrary and methodologically incorrect. Coin-assemblages may only be compiled from coins originating from graves in the same typo-chronological group, and both the Németszentpéter and the Szeghegy graves fail that criterion. For want of a better explanation, Martin justified his procedure, the concealed motive for which may simply have been the need to increase the number of the four graves with coins originally classified in that group, by claiming that, on account of the difference between the commencement dates between the beginnings of the individual minting periods (616 - 610), the *terminus post quem* (616) furnished by the coins from those two graves only extends the actual coin-assemblage of the first group (584, 584, 603 and 610) “by six years” (584, 584, 603, 610, 616 and 616).¹³

The majority of the Byzantine coins are gold coins, primarily *solidi* and less frequently one-third *solidus* coins, i.e. *tremisses*. Unlike copper Byzantine coins, these were not marked with the year of their minting, the timing of which can only be determined to have fallen into periods of varying length. The individual coins could have left the mint during any particular year within the corresponding period. We can therefore assume that one of the graves from a specific typo-chronological group containing the latest coins may also

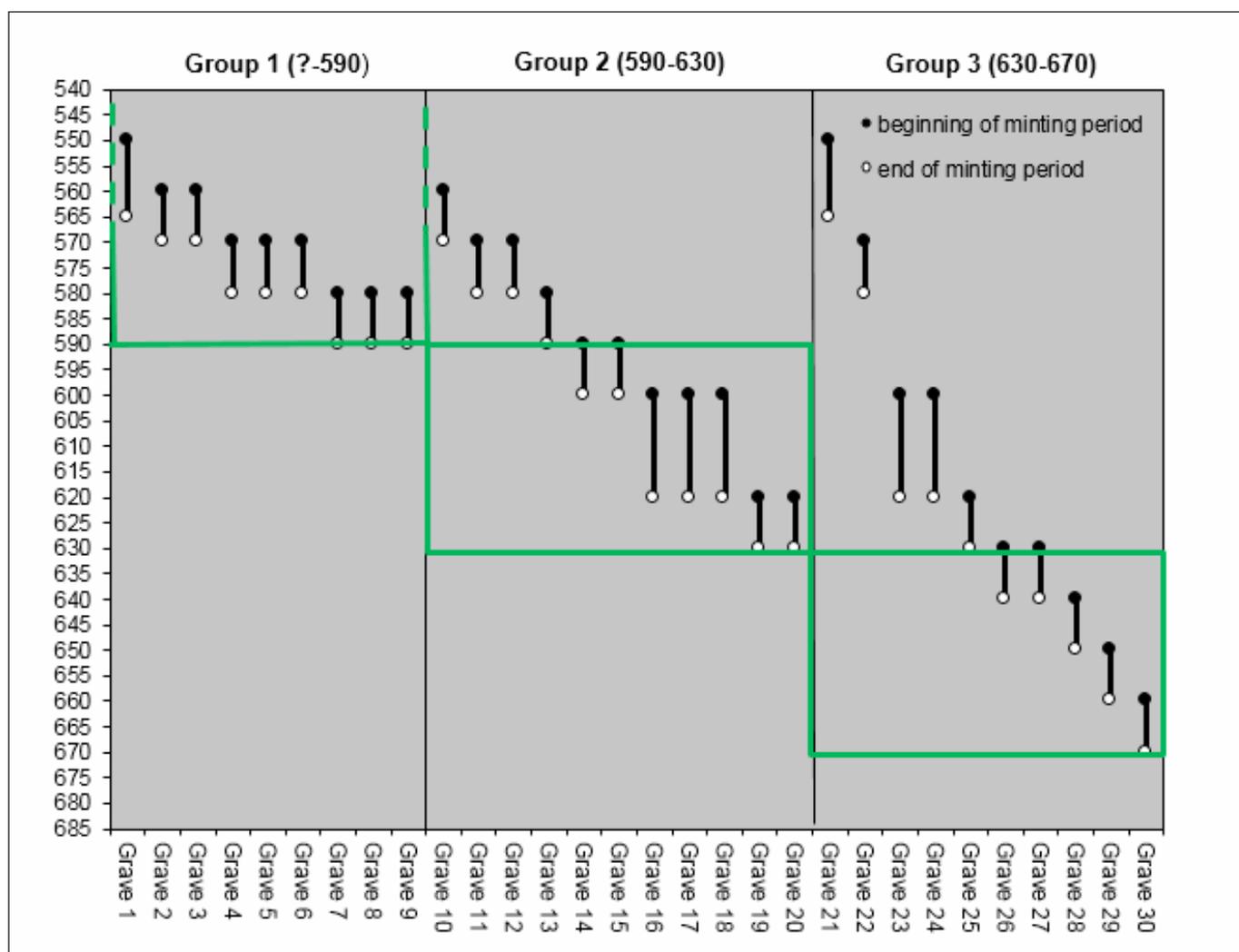


Figure 8: A fictitious and idealised example of the absolute dating of typo-chronological groups using the corrected coin-assemblage method. The upper boundary of the groups is the closing year of the minting period of the most recent type of coin

¹³ MARTIN 2008, 166.

contain a piece minted in the last year or last few years of the minting period of that type of coin. On the other hand, based on the *terminus ante quem non* principle, that grave could not have been dug in the years prior to the last year or years of the minting period, which implies that the grave could not date from the first year of that period. Which contradicts Martin's assertion that the last possible year for interment in the graves of the group is determined by the commencing year of the minting period of the latest coins included in the coin-assemblage (Fig. 1). This contradiction may only be resolved by setting the final dates of typo-chronological groups, and the latest date at which graves in the group could have been dug, to be the *closing years* of the minting period of the latest coins included in their coin-assemblages (Fig. 8).

Compared with Max Martin's version (584, 584, 603 and 610), the coin-assemblage of the first group adjusted in accordance with that line of thought (602, 602, 607 and 613) only changes the upper limit date of the first group to an insignificant degree. The reason for that is that the coin-assemblage's latest coin is a *solidus* that was only minted for a period of three years during the rule of the emperor Heraclius. In contrast, due to the greater difference between the ends of minting periods the corrected coin-assemblage extended by the addition of the *solidi* of Heraclius from Németszentpéter and Szeghegy (602, 602, 607, 613, 625 and 625) closes 12 years (625 - 613) later than the one specified on a typo-chronological basis. Max Martin justified the extension of the coin-assemblage on a non-typo-chronological basis by claiming that this only results in an insignificant, 6-year shift in the latest possible date, i.e. the original coin-assemblage and the one extended with the two *solidi* are chronologically equivalent. The question is whether the real shift, which actually amounts to 12 years, can still be considered negligible? As it is rather unlikely that an objective response can be furnished to that question, the correct methodological approach to take would be to avoid experimenting with the extension of coin-assemblages on a non-typo-chronological basis entirely. With regard to the assemblage of the first group of four coins, we must acknowledge the fact that it fails to satisfy the condition of having a representative number of graves with coins in each of the typo-chronological groups.

With regards to the coins in the second and third groups, even Max Martin could only admit that they actually fail to form coin-assemblages. The second group has only one grave containing coins (654–659), while the three graves with coins in the third group contain coins whose minting periods do not form a contiguous sequence. That is because the *solidus* of Justinian I from Kunágota (542–565) was minted over a hundred years prior to the *solidus* of Constantin IV from Ozora-Tótipusztá and the imitation coin from Kiskőrös (669–674).¹⁴ Due to the unfavourable composition, the coin-assemblage of the third group consists in practice of a single chronologically relevant minting period. And that, as in the case of the second group also, is only sufficient to establish a *terminus post quem* date.

Max Martin did not take into account the circumstance that the Kiskőrös no. 53 grave, quite exceptionally, contained not one, but two coins or, more precisely, two imitation silver coins. An analysis of the imagery of those pieces has established that one of the imitation coins was based on a *solidus* or silver coin minted between 648 and 651/2. While one face of the other imitation coin, which is also mentioned by Martin, is in the likeness of a *solidus* or silver coin minted 669–674, the other face appears to be based on coins from 659–668.¹⁵ Although my comment has only marginal relevance, it certainly supports the idea that within the coin-assemblage of the third group, only the coins minted after the middle of the 7th century have any chronological significance. This is also borne out by the fact that a belt set belonging to the third group (Fig. 5) was found in Grave no. 264 of the Jászapáti cemetery with an imitation coin that was probably based on the *tremissis* of Heraclius minted in Ravenna between 637 and 641.¹⁶ That implies that the *solidus* of Justinian I, as noted by Max Martin, is an outlier and as such should not be considered as a part of that coin-assemblage.

Max Martin made no attempt to disguise the fact that the flow of Byzantine coins to Avaria, and their circulation there, was not continuous. It is widely known that in 626 the Byzantine administration

¹⁴ MARTIN 2008, 166.

¹⁵ SOMOGYI 1997, 50–53.

¹⁶ MADARAS 1994, 71, Plate XXXVII; SOMOGYI 1997, 47–48.

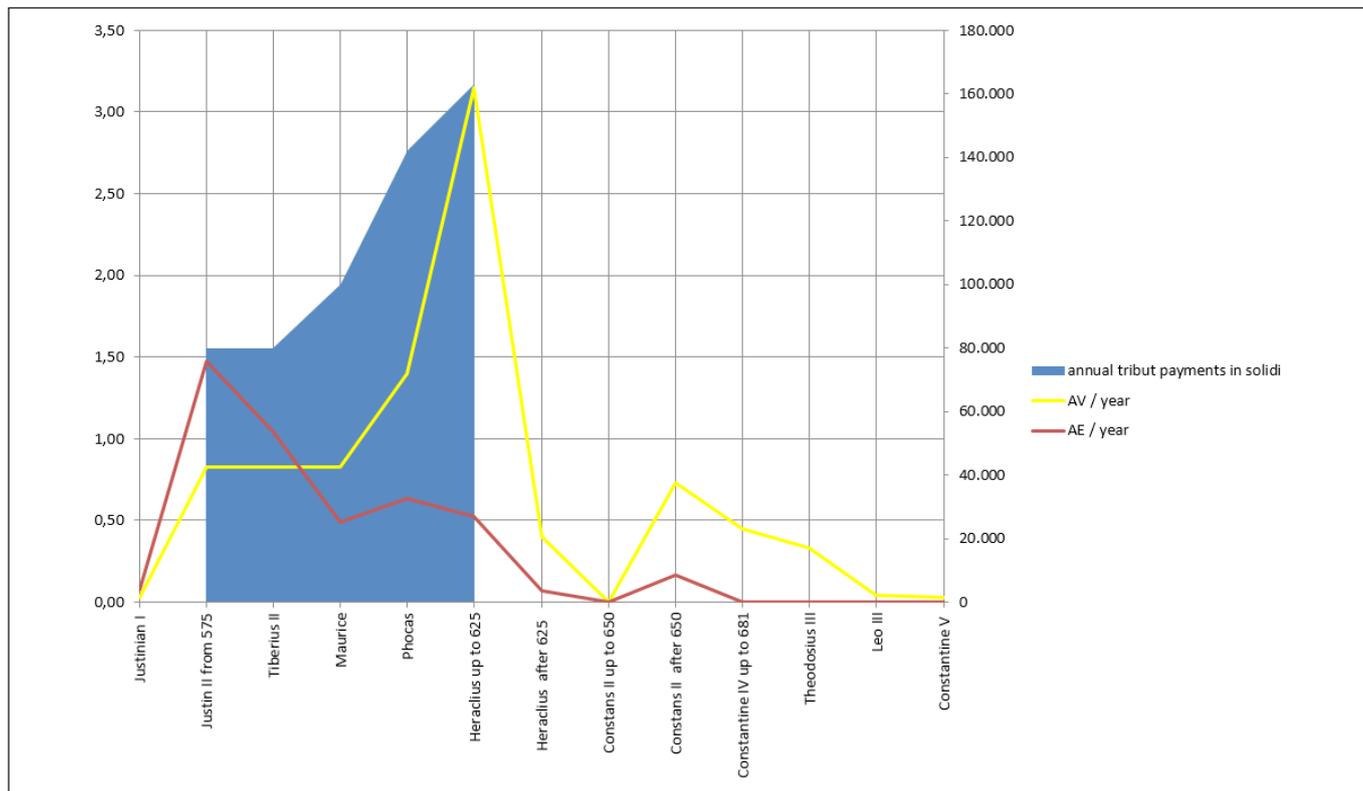


Figure 9: Quantity distribution of Avar Age gold and copper coin finds. AV/year = average of gold coin finds per year of reign, AE/year = average of copper coin finds per year of reign

discontinued the tribute it had paid partly in gold to the Avars more or less regularly from 575. Money from Byzantium only reached the Avars again starting in the 650's, but then only in much smaller quantities than during the years of the annual payments, and now with some silver coins also included along with the gold. That flow of coins dried up again around 680, and from that time, Byzantine coins became very scarce in Avaria. Not a single Byzantine coin has been found in any of the many thousands of graves known from the 8th century¹⁷ (Fig. 9). As to what caused that second flow of coins, and what finally brought it to a stop, given the laconic and mutually contradictory historical sources, we can only guess.

Although the flow of Byzantine coins to Avar territory was not continuous, that circumstance only disqualifies the coin-assemblages of typo-chronological groups whose latest coins are those transported to the region immediately prior to the termination of circulation. In such cases, the coin-assemblage is not going to be sensitive to any use of belt sets once the circulation of coins had declined. The reason for this is that even if coins were placed in graves dug following the cessation of their circulation, given that current coins were no longer available, they could only have been objects minted during the years of the regular flow of coins that had been retained over longer periods of time. As the coin-assemblage of the first group closes in 613, that of the second group in 659 and that of the third group in 674, i.e. still during the period of a regular flow of coins, it appears that the condition of continuous circulation of coins obtains in respect of all three. Sadly, however, that is appearance only, as the few graves containing coins from each of the three typo-chronological groups are statistically not sufficient for the construction of reliable coin-assemblages. Therefore all the conclusions drawn from them, including this one, are built on shaky foundations and could be overturned by a single new date.

One good example of this is Grave no. 1329 from the Avar Age cemetery at Zamárdi, from which a belt set clearly classifiable in Max Martin's first group (Fig. 3) was recovered with a *solidus* of Heraclius minted 616–625.¹⁸ However, the new grave find did not merely extend the upper boundary of the coin-assemblage

¹⁷ SOMOGYI 1997, 114.

¹⁸ BÁRDOS–GARAM 2009, 182–183, Plate 160.

of the first group by 12 years: in one fell swoop, it also rendered the coin-assemblage terminally unsuitable for the absolute dating of the group. The reason being that with the new addition the coin-assemblage then closes with a *solidus* of the last type of coin to have reached Avaria prior to the cessation of tribute payments, which, as we have seen, actually precludes use of the method altogether.

The third applicability condition for the coin-assemblage method is that the typo-chronological groups supplying the graves with coins should be directly consecutive, i.e. that they should form a contiguous relative chronological sequence. The structure of Merovingian Age belt sets progresses from the simple to the complex, exhibiting a development consisting of three consecutive basic types. Working on the assumption that Avar Age belt sets follow the same pattern, Max Martin also classified the belts from the graves with coins based on the number, system and consistency of metal fittings. As a result of that classification, he once again describes three consecutive typo-chronological groups. At the same time, he also notes that the Avar Age belts with fittings of a Byzantine-Mediterranean origin—such as the Fönlak-Aradka type belt from the mounted, coin-bearing grave at Németszentpéter—do not fit into that relative chronological sequence. It is therefore rather peculiar that the belt fittings from Kunágota, Ozora-Tótipusztá and Kiskörös,¹⁹ also of a Byzantine-Mediterranean origin, were included in Max Martin's system, and what is more, in its final, i.e. closing group. It also forms evidence against the necessary linearity of the typo-chronological model of the coins in the second and the third group which were minted more or less simultaneously. With regard to the first group, the Nyíregyháza grave that Martin classified as part of it should actually be in the second group since the description of the grave clearly indicates that the belt strap also had fittings.²⁰

Today, a whole series of belt set types with various structures and compositions have been distinguished among Early and Middle Avar Age belts, and the origins and interrelations of the individual types have been established. In view of the joint conclusions of that research, the development of Avar Age belts, unlike that of the Merovingian Age, cannot be modelled along a single line because we have evidence for the existence of parallel lines of development. Some types do follow each other chronologically, while others were fashionable during partially or completely overlapping periods, and the possibility of regional groups should also be taken into account.²¹ In the light of this it is entirely evident that Max Martin's simple classification, riddled with inconsistencies and errors, will have to be fundamentally remodelled for use in the future.

Max Martin's attempt to determine the periods of use of a few types of Avar Age belt sets using the coin-assemblage method was unsuccessful, essentially inevitably, for the above stated reasons. He was quite aware of this, given that he deduced the ends of the first and third typo-chronological groups (which, he states, also indicate the beginning and the end of the Middle Avar Age) from the most probable known dates of historical events and archaeo-numismatic phenomena. The extinguishing of the source of gold in 626 led to fundamental changes. According to Max Martin, one aspect of the change in Avaria was the termination of the use of the structurally simple belt sets that were characteristic of the first group. On that basis, he concluded that the end of the group, and also the end of the Early Avar Period took place in 620-630. In referencing the notion supported by several scholars that the final disappearance of the flow of Byzantine coins around 680 also brought significant changes in which the belt sets of the second and third groups were replaced by belts with cast fittings, Max Martin claimed that the end of the third group, and along with it the end of the Middle Avar Period, took place in the last third or quarter of the 7th century.²²

Although the current number of 58 Avar Age graves with coins (*Fig. 10*) may still increase, the number

¹⁹ GARAM 2001, 115–119 (Fönlak-Aradka type), 119–124 (fittings with point and dash motifs), 133–137 (fittings with leaf motifs), 148–150 (fittings with bird motifs). It is beyond comprehension why, despite their similar ranges of motifs, the Kunágota belt set was not included among the point and dash, and the Ozora-Tótipusztá belt set was not included among the leaf motif pressed Byzantine belt fittings.

²⁰ CSALLÁNY 1958, 50.

²¹ MARTIN 1990; Bálint 1992; VIDA-PÁSZTOR 1996; SZENTHE 2006; SZENTE 2012; BALOGH 2011 and BALOGH-WICKER 2012.

²² MARTIN 2008, 167–168.

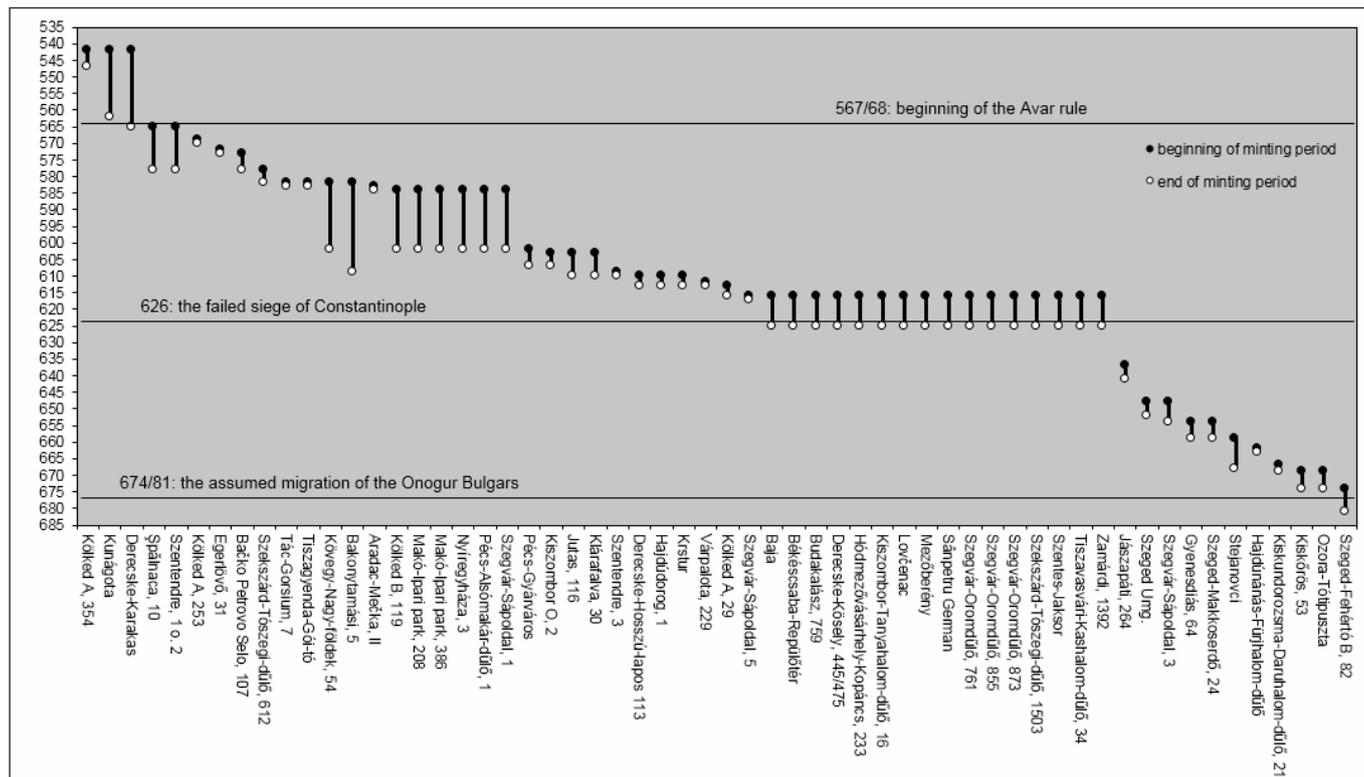


Figure 10: *Terminus post quem* data for the digging of the Avar Age graves with coins resulting from the minting periods of Byzantine coins and their imitations.

of graves with coins in the typo-chronological groups that have been or may be elaborated on the basis of any object type will continue to be small. For that reason, and because the flow of coins was not continuous during the 7th century, the applicability of the coin-assemblage method must be assessed on a case-by-case basis. However, Avar Age research still has a long way to go before then, given that graves and grave goods are currently still dated in accordance with the previous practice, individually and directly to the time of minting of the Byzantine coins or their imitations found in them.²³ On the other hand, it is a welcome development that in the meantime, radiocarbon dating has been accepted in research of the period. The radiocarbon dating of the samples obtained from the graves with Byzantine coins is of particular importance, as the known minting periods can be used to verify any doubtful or potentially doubtful radiocarbon data, in some cases it will also be possible to reduce the length of periods established using individually calibrated or by Bayesian analysis refined radiocarbon dating.²⁴

If this development trend continues, it would be worth extending sampling for radiocarbon dating to the graves in the subsequent typo-chronological groups. That is because the time intervals furnished for the graves in the groups through radiocarbon measurements coincide with the minting periods of the coins, and therefore they can be used without further ado to extend the existing coin-assemblages, and in the case of the typo-chronological groups that do not contain any graves with coins, radiocarbon assemblages can be assembled on the pattern of the coin-assemblage. In such cases, the beginning of the group would be determined by the earliest, while the end of the group would be dated to the most recent radiocarbon data point.

Naturally, the two conditions for the reliability of the coin-assemblage, the representative number of items and continuity, would also be applicable in the case of the radiocarbon-assemblage. As continuity is a given, and a single typo-chronological group usually consists of finds from several dozen graves, the number or radiocarbon measurements, i.e. statistical reliability only depends on the financial resources

²³ SOMOGYI 2011, 193, 216.

²⁴ SOMOGYI 2011, 217; SIKLÓSI 2014; SIKLÓSI-LŐRINCZY 2015.

available. If the financial background is provided for a suitable number of samples and measurements, it would be a great advantage of the radiocarbon-assemblage method relative to the coin-assemblage method that it would be applicable to those periods of the Avar Age—or any age generally—that have no graves containing coins. It goes without saying that cooperation between researchers of the Avar Age and suitable support from background institutions would be indispensable for a comprehensive radiocarbon-dating assemblage project to cover the entire Avar Age, on account of the high cost involved, and the sheer amount of work entailed in the elaboration of typo-chronological groups and the practical implementation of the sampling.

LITERATURE

BALOGH, CSILLA (2011)

Kora avar kori ún. propeller alakú övveret a kunpeszéri 3. sírból (Early Avar Age so-called propeller-shaped belt fitting from the 3rd grave at Kunpeszér) in *Yearbook of the Ferenc Móra Museum, Studia Archaeologica* 12, 257–276.

BALOGH, CSILLA – WICKER, ERIKA (2012)

Avar nemzetségszű sírja Petőfiszállás határából (Grave of an Avar clan leader from the outskirts of Petőfiszállás). In: Vida, Tivadar (ed.): *Thesaurus Avarorum. Régészeti tanulmányok Garam Éva tiszteletére (Studies in archaeology in honour of Éva Garam)*. Budapest: MNM-ELTE RTI-MTA BTK RI, 551–579.

BÁLINT, CSANÁD (1992)

Kontakte zwischen Iran, Byzanz und der Steppe: Das Grab von Üç Tepe (Sowj. Azerbajdžan) und der beschlagverzierte Gürtel im 6. und 7. Jahrhundert. In: Daim, Falko (Hrsg.) *Awarenforschungen 1. Studien zur Archäologie der Awaren 4*. Wien: VÖAW, 309–496.

BÁRDOS, EDIT – GARAM, ÉVA (2009)

Das awarenzeitliche Gräberfeld in Zamárdi-Rétiföldek. MAA 9. Budapest: MNM.

Csallány Dezső (1958)

Szabolcs-Szatmár megye avar leletei (Avar finds from Szabolcs-Szatmár County) *Yearbook of the András Jóna Museum*, 1, 31–85.

GARAM, ÉVA (1992)

Die münzdatierten Gräber der Awarenzeit. In: Daim, Falko (Hrsg.): *Awarenforschungen 1. Studien zur Archäologie der Awaren 4*. Wien: VÖAW, 135–250.

GARAM, ÉVA (2001)

Funde byzantinischer Herkunft in der Awarenzeit vom Ende des 6. bis zum Ende des 7. Jahrhundert. MAA 5. Budapest: MNM.

MADARAS, LÁSZLÓ (1994)

Das awarenzeitliche Gräberfeld von Jászapáti. Debrecen–Budapest.

MARTIN, MAX (1990)

Awarische und germanische Funde in Männergräbern von Linz-Zizlau und Környe. Ein Beitrag zur Chronologie der Awarenzeit. *A Wosinsky Mór Múzeum Évkönyve* 15, 65–90.

MARTIN, MAX (2008)

Die absolute Datierung der Männergürtel im merowingischen Westen und im Awarenreich. *Antaeus* 29–30, 143–173.

SIKLÓSI ZSUZSANNA (2014)

A Tiszavasvári-Kashalom-dűlőben és Hajdúnánás-Fürj-halom-járáson feltárt avar sírok radiokarbon keltezése (Radiocarbon dating of the Avar graves found at the Tiszavasvári-Kashalom Hill and the Hajdúnánás-Fürj Burial Mound excavations). *Yearbook of the András Józsa Museum*, 56, 229–236.

SIKLÓSI ZSUZSANNA – LŐRINCZY GÁBOR (2015)

Pitvaros-víztározói késő avar kori temető radiokarbon keltezése, Bayes analízise és régészeti értékelése (Radiocarbon dating, Bayesian analysis and archaeological assessment of the Late Avar Period cemetery at Pitvaros-víztározó). In: Türk, Attila (ed.): *Hadak útján XXIV. A népvándorlaskor fiatal kutatóinak XXIV. konferenciája Esztergom, 2014. November 4-6. 1.* Budapest–Esztergom: Archaeolingua, 707–736.

SOMOGYI, PÉTER (1997)

Byzantinische Fundmünzen der Awarenzeit Monographien zur Frühgeschichte und Mittelalterarchäologie 5. Innsbruck: Wagner.

SOMOGYI, PÉTER (2002)

Das „Reitergrab“ von Szeghegy (heute Lovćenac, Serbien) – eine Neubewertung. *Yearbook of the Ferenc Móra Museum, Studia Archaeologica* 8, 283–289.

SOMOGYI, PÉTER (2011)

Byzantinische Fundmünzen in der Awarenforschung – eine Forschungsgeschichte von den Anfängen bis zum Jahre 2010. *Yearbook of the Ferenc Móra Museum, Studia Archaeologica* 12, 171–224.

SZENTHE, GERGELY (2006)

Középvár kori összetett hátveretek. Egy középvár övtípusról (Middle Avar-Age composite back fittings. About a Middle Avar belt type *Communicationes Archaeologicae Hungariae*, 179–212.

SZENTHE, GERGELY (2012)

7. századi ezüstlemezes övgarnitúrák. Adatok az ezüstlemezből készült, sima felületű övveretek elterjedéséhez (7th century silver plate belt sets. Data about the distribution of plain belt fittings made of silver plate). In: Vida, Tivadar (ed.): *Thesaurus Avarorum. Régészeti tanulmányok Garam Éva tiszteletére (Studies in archaeology in honour of Éva Garam)*. Budapest: MNM–ELTE RTI–MTA BTK RI, 521–550.

VIDA, TIVADAR (2011)

Das Gräberfeld neben dem Horreum in der Innenbefestigung von Kesztehely-Fenekpuszta. In: Heinrich-Tamáská, Orsolya (Hrsg.): *Kesztehely-Fenekpuszta im Kontext spätantiker Kontinuitätsforschung zwischen Noricum und Moesia*. Budapest–Leipzig–Kesztehely–Rahden/Westf.: Verlag Marie Leidorf GmbH, 397–455.

VIDA, TIVADAR – PÁSZTOR, ADRIEN (1996):

Der beschlagverzierte Gürtel der Awaren am Beispiel des Inventars Budakalász-Dunapart, Ungarn, Grab 696. In: Daim, Falko (Hrsg.): *Reitervölker aus dem Osten. Hunnen + Awaren*. Eisenstadt: Amt der Burgenländischen Landesregierung, 341–345.

RECOMMENDED LITERATURE

BÁLINT, CSANÁD (1995)

Kelet, a korai avarok és Bizánc kapcsolatai. Régészeti tanulmányok (Relationships between the East, the early Avars and Byzantium). Magyar Őstörténeti Könyvtár (Library of Hungarian Archaeology) 8. Szeged: József Attila University of Sciences, Hungarian Archaeology Research Group.

SOMOGYI, PÉTER (2014)

Byzantinische Fundmünzen der Awarenzeit in ihrem europäischen Umfeld. Dissertationes Pannonicae 4/2. Budapest: L'Harmattan.

STADLER, PETER (2005)

Quantitative Studien zur Archäologie der Awaren I. Wien: VÖAW.

STEUER, HEIKO (1998)

Datierungsprobleme in der Archäologie. In: Düwel, Klaus (Hrsg.): *Runeninschriften als Quellen interdisziplinärer Forschung Abhandlungen des 4. Intern. Symp. über Runen und Runeninschriften in Göttingen vom 4.-9. August 1995*. Berlin: De Gruyter, 129–149.