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## ABOUT THE SPEARHEADS OF TRIANGULAR CROSS-SECTION FROM DACIA

The triangular cross-section spearhead, which constitutes the subject of the present study, represents a particular weapon category. This very type of spearhead was published, in our countries' speciality studies, under the name of *pilum* or lance of a particular nature. In most of the cases, however, it was considered to be a descendant of the *pilum*, being published as such.

Vlădescu indicates a single iron spearhead as belonging to this type, which is the one found at Racovița, calling it "spearhead with equal edges, ended in its inferior side with three barbs", considering this very type quite rare<sup>1</sup>. In his typology of the offensive weaponry of Dacia Porolissensis, Gudea frames these weapons in a conventionally named type SU A1<sup>2</sup> his approach being not intended to consider the ancient literary sources. Petculescu considered that all the pyramidal spearheads from the Roman Dacia had a triangular cross-section and three barbs, so they all belong to the same type, while those of a quadrilateral cross-section were catapult bolt-heads or, if made of bronze, they could have had a totally different signification<sup>3</sup>.

The literary sources referring to this type of spear are indicating, as we will see below, a specific denomination, revealing also, a history of its own in the much larger family of the offensive weapons used by the Roman army. Its first attestations in the Latin historiography are to be met in the republican times, during the second Punic war. It seems that spears of this type were used by the youngest members of the republican legion, the *velites*. They, abandoning the old *hasta*, were carrying 5 to 6 *hasta velitaris* or *veru* (*verutum*)<sup>4</sup>.

Polybios, referring to the weapon used by the *velites* which fought in the second Punic war, is using the term *hasta velitaris*, a spear which had a 22 cm long head and a 90 cm long shaft<sup>5</sup>. On his turn, Titus Livius mentions, during the same war, a spear called *verutum*<sup>6</sup>. We have all the reasons to superpose this term to that used by Polybios for the *velites'* spear, considering the fact that we used fragments which refer, on both authors, to contemporary events. We also consider that these two sources refer to a specific type of weapon which will be described much later by Vegetius.

\* indicates dimensions calculated by measurements on the drawings published in the quoted publications; L - indicates the total length; L. b. - indicates the length of the blade; d.s.- indicates the diameter of the socket; the dotted triangles and circles belong to the authors of this study. The numbers given in the figures correspond to those in the catalogue.

<sup>1</sup> Cr. M. Vlădescu, *Armata romană din Dacia Inferior*, București 1983, 164.

<sup>2</sup> N. Gudea, *Römische Waffen aus den Kastellen des westlichen Limes von Dacia Porolissensis*, EN 1, 1991, 72, 74, fig. 2.

<sup>3</sup> L. Petculescu, *Armamentul roman în Dacia în secolele I-III*, (diss) Institutul de Arheologie "V. Pârvan" București 1998, 77.

<sup>4</sup> P. Couissin, *Les Armes Romaines. Essai sur les origines et l'évolution des armes individuelles du légionnaire romain*, Paris 1926, 26.

<sup>5</sup> Polybios VI, 22, 4.

<sup>6</sup> Titus Livius XXI, 55, 11: "...eos velites, ad id ipsum locati, verutis coniectis et avertere et inseculi aversos sub caudis ...". The authors of the quoted edition considered this kind of weapon as being a special one, of course out of philological reasons: rudely made weapon, specific to the Italic populations, used by the *velites* - Titus Livius XXI, XXII (O. Rieman, E. Benoist) Paris 1897, 372.

According to Couissin, along with the term of *hasta velitaris* are concomitantly kept in use the terms of *verutum* and *gaesum*. Virtually, for the centuries 5<sup>th</sup> to 2<sup>nd</sup> B.C., to designate the spear of the light troupes, were successively used: the primitive Sabin-Latin *verutum*, the Gallic *gaesum*, the *grosphos*, designated until much later by terms as *gaesum* and *verutum*<sup>7</sup>.

Feugère, instead, considers that *verutum* is a throwing weapon of Italic origin, which designates a kind of *pilum* of the republican age, also possible to be found under the Celtiberic name of *soliferrum*, the same term appearing among the legionary weaponry during the 4<sup>th</sup> century A.D., probably to designate a late variant of *pilum*<sup>8</sup>.

The archaeological expression of the *verutum* in the republican period is represented by the spearheads found at the beginning of our century in the Roman fort of Numantia (fig. 1/B). The most striking thing for us is the resemblance between the Numantia spearheads and those described by Vegetius as belonging to the republican times. The shape and the dimensions, as well as the report between the blade and the socket are corresponding to the Vegetian prototype. It is about five exemplaries found in the so called "fort of Scipio"<sup>9</sup>.

Enumerating the *pila* found here, once arrived at the pieces that are the subject of our discussion, Groller mentions that "from here starts the uncertainty" assuming that he was dealing with shapes that deviate from the *pilum*<sup>10</sup>. These spearheads, 22,3 respectively 17 cm. long, with a socket diameter of 2,2 cm., are corresponding to the description of *spicula* made by Vegetius<sup>11</sup>.

During the imperial period, according to Vegetius, the heavy infantry had two spears<sup>12</sup>: "the longest one, made of a triangular iron 9 ounces long [22 cm.] and a shaft 5,5 *pedes* long [1,627 m.] which used to be called *pilum*, is now called *spiculum*; its throwing was the main exercise of the infantry; the short one, made of a triangular iron 5 ounces long [12 cm.] and a shaft 3,5 *pedes* long [1,03m.], which used to be called *vericulum* is now called *verutum*"<sup>13</sup>.

The so called *pilum*, described by the same Vegetius<sup>14</sup> as being "made out of a thin and triangular iron, 9 ounces up to 1 *pes* [29 cm.] long, pierced normally a shield, without the possibility of being stopped, and even an armour, if launched by strong arms" is, according to Couissin<sup>15</sup>, indeed a *pilum* if we accept the extremely wide sense which its contemporaneity gave to it. But, nor by its shape neither by its proportions, this one doesn't seem at all like the *pilum* of the classical age. Experimentally it was proven that the term "triangular" mustn't mean a spear with shoulders because those shoulders, if placed 22-29 cm. from the top allow a very reduced penetration force; if triangular refers to the cross-section of the iron we have to deal with a threefaced pyramid<sup>16</sup>.

<sup>7</sup> P. Couissin (n. 4), 217. *Verutum* and *gaesum* were probably endowed with the *amentum*; *hasta velitaris* had it for sure - P. Couissin (n. 4), fig. 38 a-f.

<sup>8</sup> M. Feugère, *Les armes des Romains de la République à l'Antiquité tardive*, Paris 1993, 278.

<sup>9</sup> M. v. Groller, in A. Schulten, *Numantia. Die Ergebnisse der Ausgrabungen 1905-1912*, Band III - Die Lager die Scipio, München 1927, 250, Taf. 34,7-11.

<sup>10</sup> M. v. Groller (n. 9), 247.

<sup>11</sup> M. v. Groller (n. 9), 50, pl. 34, 7-8 (= 48, 1-2). Although fragmentary, the three exemplaries published (pl. 34, 9-11) have approximately the same dimensions, likely to be *spicula*. The best analogy for the time when they were published was considered to be: L. Jacobi, *Das Römerkastell Saalburg bei Homburg v. d. Höhe*, 1897, 489 (a 20 cm. long spearhead).

<sup>12</sup> P. Couissin (n. 4), 480: *missilia*.

<sup>13</sup> Vegetius II 15.

<sup>14</sup> Vegetius I 20.

<sup>15</sup> P. Couissin (n. 4), 480.

<sup>16</sup> J. Quicherat, *Le Pilum de l'infanterie romaine*, in MAF 1866, 280.

*Spiculum* and *verutum* are, on the other hand, the only spears mentioned by Ammianus Marcellinus<sup>17</sup> as belonging to the infantry, being, actually, the substance of the throwing weapons in the late Roman army<sup>18</sup>. Vegetius also, mentions that "the centurion has to be used to launch the *spiculum* and the *vericulum*"<sup>19</sup>.

*Vericulum* (approx. 12 cm. long), according to Vegetius, seems to not have differed of the *spiculum* (22-29 cm. long) but by its length. It seems we are dealing with different models of the same weapon, generic called *verutum*. Most probable the *vericulum* is only a transformation, a degeneration of the *spiculum* which, on its turn, was but a "degenerated *pilum*"<sup>20</sup>.

Herrmann identified the pyramidal spearheads of triangular cross-section from Künzing (fig.1/A) with *spiculum* and *vericulum*<sup>21</sup>. The *fabrica* where were found these spearheads belongs to the 4<sup>th</sup> phase of the castle, dated at the middle of the 3<sup>rd</sup> century<sup>22</sup>. This is the chronology also used by Scott when analysing the spearheads on the British *limes*, using, along with the Künzing spearheads two such artifacts from Britain (one from Newstead and one from Chesters)<sup>23</sup>. He considered that the above called spearheads were too long to be catapult bolt-heads, unlikely to be infantry weapons and so he ascribed them to the cavalry. Their dating would fit between the middle of the 2<sup>nd</sup> century and the middle of the 3<sup>rd</sup>.

According to Petculescu the pyramidal spearheads from Roman Dacia have, all of them, a triangular cross-section, belonging so, to the same type<sup>24</sup>. The same term is used by Scott, where from it seems to have been taken in our speciality literature through the above mentioned author and, before him, through Vladescu<sup>25</sup>.

We doubt however that the pyramidal spearheads of quadrilateral cross-section could be something else but spears, as long as the majority of them have the same dimensions as those of triangular cross-section. Our opinion is contrary to the one formulated by Petculescu who considered that all the pyramidal exemplars with a quadrilateral cross-section are either catapult bolt-heads or, if made of bronze, have a totally different meaning<sup>26</sup>.

<sup>17</sup> Ammianus Marcellinus XVI 12.

<sup>18</sup> D.A. IV, 1, 482.

<sup>19</sup> Vegetius II 14.

<sup>20</sup> P. Couissin (n. 4), 483: *Spiculum* and *vericulum*, generic designated by the ancient *verutum*, succeeded the *pilum*. They are the only Roman spears mentioned by Ammianus Marcellinus (XVI 12): "*spicula tamen verutaque missilia non cessabant*". If the quoted author still uses the term *antepilani* and the expression "*propilare missilia*", as well as the term *pilum*, it is because he tried to use in writing terms of the classic Latin. (According to Claudianus, it was extremely commendable the manner through which certain authors used linguistic relicts in order to reput them in use, fact which explains our situation too).

<sup>21</sup> F.-R. Herrmann, *Der Eisenhortfund aus dem Kastell Künzing, Vorbericht*, SJ 26, 1969, fig. 4, 11-14.

<sup>22</sup> F.-R. Herrmann (n. 21), 129 n. 4, fig. 1.; F.-R. Herrmann, *Die Ausgrabungen in dem Kastell Künzing/Quintana*, Stuttgart 1972, fig. 5; H. Schönberger, *Römerkastell Künzing, Grabung 1962*, SJ 21, 1963/4, 83-84.

<sup>23</sup> I. R. Scott, *Spearheads of the British limes*, Roman Frontiers Studies, Stirling 1979 (Ed. W. S. Hanson, L. J. F. Kippie) BAR IS 71, Oxford 1980, 337, nr. 7, fig. 24.2/ 9-11. See also U. Fischer, *Grabungen in römischen Steinkastell von Hedderheim 1957-1959. Schriften des Frankfurter Museums für Vor- und Frühgeschichte II*, Frankfurt am Main 1973, 127 Abb. 39/1; G. Müller, *Untersuchungen am Kastell Butzbach, Limesforschungen Bd. 2*, Berlin 1962, 59 Taf. 16/16; W. Zanier, *Das römische Kastell Ellingen, Limesforschungen Bd. 23*, Mainz 1993, 188 nos.26, 27 Taf. 24/C<sub>26</sub>, C<sub>27</sub>.

<sup>24</sup> L. Petculescu (n. 3), 77.

<sup>25</sup> See note 1.

<sup>26</sup> L. Petculescu, *Bronze spearheads and spear butts from Dacia*, JRMES 2, 1991, 35-58.

So, the *verutum* defines a pyramidal spear with three edges and a circular tang, its subtypes being separable between themselves only by dimensions, the same ones mentioned by the Latin authors<sup>27</sup>. We consider that, at least in Dacia's case, this differentiation is to be found in the archaeological realities, all the exemplaries available for the present study quite close around the dimensions mentioned by the ancient literary sources. Thus the ones we included in the category *spiculum* (the ones that have no missing parts) have dimensions comprised between 17 and 24 cm. and the ones included at *vericulum* are standing approximately between 10 and 14 cm. The numbers 20, 22, 23 from Bologa and 11 from Gilău have approximately 16 cm. being, thus, atypical by size, reason for which we did not include them in neither of the categories.

These pyramidal spearheads of triangular cross-section were widely spread in the province of Dacia. They were found both in cavalry castles (Răcari<sup>28</sup>, Gherla, Gilău, Ilișua) and in castles where were stationed mixed troupes (Porolissum, Bologa, Inlăceni and Jidava), in infantry (Buciumi) or legionary castles (Potaissa).

Scott considered that these spears were used only by the cavalry. We must not ignore the fact that they could have been used by the infantry as well, at least if we consider the lines of Ammianus Marcellinus where he says that these spears were actually used by the footman<sup>29</sup> and also the finding of such artifacts in infantry (Buciumi) and legionary (Potaissa) castles.

We consider that this very type of spear was used on a quite large scale, especially by the cavalry but, for as long as they keep appearing other contexts too, this assignment cannot be done in categorical terms.

The ones found in castles where were stationed *alae* are in a quite large number, 11 (1-11), and they were found at Ilișua, Gherla and Gilău.

From Ilișua we have six such spears, five of which (1-3, 5, 6) are *spicula*, one *vericulum* (4). Unfortunately nor the ones found in older excavations<sup>30</sup>, neither the ones found in more recent campaigns<sup>31</sup> do not have any information connected to the finding place or the stratigraphical context.

At Gherla, two *spicula* are known, 18 respectively 20 cm. long, which have, as a particular feature three barbs at the lower part of the blade. They were dated between the years 170 and 270 A.D.<sup>32</sup>.

The spearheads from Gilău do not have any dating information. There were found two *vericula*<sup>33</sup> and one which, by its size, as we said, is atypical to our classification<sup>34</sup>.

About the rest of the spearheads, they were found in castles where were stationed mixed or infantry troupes (12-22, 25, 28), or in civil settlements from the inside (23, 26) and from the outside of the province (27). They are all discussed in the order given by our catalogue.

<sup>27</sup> See note 13.

<sup>28</sup> L. Petculescu (n. 3), 77. The quoted author includes this exemplar only in the classification he makes at the indicated page, without offering any illustration or additional informations about it.

<sup>29</sup> See note 17.

<sup>30</sup> Ioana Hica-Cîmpeanu, *Din colecțiile Muzeului de istorie al Transilvaniei - Donația Torma Károly. Unelte și arme romane în zona Ilișua - Cristeștii Ciceului*, AMN 19, 1982, 604, fig. 4/5-8.

<sup>31</sup> D. Protase, C. Gaiu, Gh. Marinescu, *Castrul roman și așezarea civilă de la Ilișua (jud. Bistrița-Năsăud)*, Revista Bistriței 10-11, 1996-1997, pl. LXIX/4, 5.

<sup>32</sup> Römer in Rumänien. Ausstellung des Römisch-Germanischen Museums Köln und des Historischen Museums Cluj. Kunsthalle Köln, 12. Februar bis 18. Mai 1969 120 C44, 45, L. Petculescu, in Miles Romanus in Provincia Dacia. Katalog der Nationalen Ausstellung. Cluj-Napoca 1997, 42, 43, 11; L. Petculescu (n. 3), 188, no. 181, 182, pl. 23/181, 182.

<sup>33</sup> M. Rusu, *Cercetări arheologice la Gilău*, Materiale 2, 1956, 714, pl. I / 8,9.

<sup>34</sup> D. Isac, Die Kohorten- und Alenkastelle von Gilău. Führer zu den archäologischen Denkmälern in Dacia Porolissensis 6, Zalău 1997, 107, pl. XXVI/5.

Four such spearheads were found at Porolissum (12-15)<sup>35</sup>. Two of them (12, 15) are dated, with a certain probability, in the 3<sup>rd</sup> century<sup>36</sup>. All four of them are *spicula* but we must mention that the last two of them (14, 15) are fragmentary.

In the *principia* of the Buciumi castle (16)<sup>37</sup> was found a 19 cm. long *spiculum*.

In the castle from Bologa were found four pieces. The N° 20 is 24 cm. long and the rest of them have lengths between 15,6 and 16 cm. Because of their length all these three exemplaires are atypical for what we have called pyramidal spearheads with triangular cross-section. Because they were found in the barracks area, at a depth of about 45-85 cm.<sup>38</sup>, it is quite probable that they belong to the second phase of the barracks, which means they belong to the chronological interval of 125-210 A.D., when there stationed the *cohors I Aelia Gaesatorum*<sup>39</sup>. The other two pieces found in the same castle were published without stratigraphical informations.

In the *porta praetoria* of the castle from Irlăceni was also found a *spiculum* who has no informations concerning its dating<sup>40</sup>.

About the *spiculum* from Jidava (18)<sup>41</sup>, besides its dimensions, we know it was identified in the burnt level of the *porta praetoria*, but there can be nothing said about the dating of this level. Vlădescu wrongly puts it among the bronze parade weapons<sup>42</sup>, his bibliographical references indicating, in fact, what we have shown above.

In the castle from Racovița (24) there is mentioned a *spiculum*, dated in the second half of the 3<sup>rd</sup> century<sup>43</sup>.

The spearheads from Romula (25)<sup>44</sup> and from Crâmpoia (26)<sup>45</sup> are fortuitous findings so, we can't do any further explanatory notes.

An interesting situation comes with the *vericulum* found in the *extra-provinciam* civil settlement from Mătășaru (27), dated in the second half of the 2<sup>nd</sup> century<sup>46</sup>. We find it normal that at Crâmpoia, as well as Mătășaru, such weapon findings to appear considering the proximity of the *limes*. From Hinova we have three such spears<sup>47</sup>.

The one found at Sarmizegetusa Regia (Grădiștea Muncelului)<sup>48</sup> is situated in the *spiculum* category (23). Published as a unicum among the Dacian weapons, it is placed in the type Ib<sup>49</sup>. It is dated 1<sup>st</sup> century A.D. to the Roman conquest. We consider it to be a spear arrived here, most probable, during Trajan's wars.

<sup>35</sup> N. Gudea, Porolissum. Un complex arheologic daco-roman la marginea de nord a Imperiului roman. I. Cercetări arheologice până în anul 1977 (= ActaMP 13), Zalău 1989, pl. CXXIX/16-19.

<sup>36</sup> N. Gudea (n. 35), 544.

<sup>37</sup> E. Chirilă, N. Gudea, V. Lucăcel, C. Pop, Castrul roman de la Buciumi, Cluj 1972, 62, pl. LVIII/8.

<sup>38</sup> N. Gudea, *Materiale arheologice din castrul roman de la Bologa*, Apulum 15, 1977, 184.

<sup>39</sup> N. Gudea, Castrul roman de la Bologa-Rescolum. Ghid al monumentelor arheologice din Dacia Porolissensis nr. 1, Zalău 1997, 28-29.

<sup>40</sup> N. Gudea, Castrul roman de la Irlăceni, ActaMP 3, 1979, 193 II.2, 252, pl.XVII/8.

<sup>41</sup> D. Tudor, *Arme și diferite obiecte din castrul roman de la Jidava*, BCMI 37, nos. 119-122, 1944, 77, fig. 1/4

<sup>42</sup> Cr. M. Vlădescu (n. 1), 166 a.2.

<sup>43</sup> Cr. M. Vlădescu (n. 1), 164, 232, fig. 101/5.

<sup>44</sup> L. Petculescu (n. 3), 187, no. 177, pl. 23/177.

<sup>45</sup> L. Petculescu (n. 3), 188, no.180, pl. 24/180.

<sup>46</sup> Gh. Bichir, *La civilisation Militari-Chilia*, Dacia N. S. 24, 1980, 162; Gh. Bichir, Geto-dacii din Muntenia în epoca romană, București 1984, 60, pl. 58/8.

<sup>47</sup> I. Stângă, *Viața economică la Drobeta în secolele II-VI p.Ch.*, Bibliotheca Thracologica XXVI, București 1998, 104 nos. 3-5 pl. LXVIII/3-5. The drawing ar of a low quality and oversimplified so we did not include them in our figures. For the spear no. 5 neither the explanations nor the draw allowed as to call it *verutum*. These artefacts are dated between 2<sup>nd</sup> and 6<sup>th</sup> century!

<sup>48</sup> I. Glodariu, E. Iaroslavschi, *Civilizația fierului la daci* (sec. II î.e.n. - I e.n.), Cluj-Napoca 1979, pl. 69/27.

<sup>49</sup> I. Glodariu, E. Iaroslavschi (n. 48), 135, see also U. Fischer 1973, 112 Abb. 30/8 (dated also in 1<sup>st</sup> century)

The spearheads from Jidava, Crâmpoia and Mătășaru, Gherla, probably Porolissum (12 and 15) and Racovița are to be dated between the end of the 2<sup>nd</sup> century and the end of the Roman presence in Dacia. The spearheads from Bologa may be a little bit earlier; the one from Sarmizegetusa Regia is by far the earliest we know in Dacia and this very one gives a note of relativity to the chronology we knew on this type of spearhead.

Thus, we are dealing with a type of spearhead which must not, in any case, be mistaken with any other type of offensive weapon. The ancient written sources are specifying, in general terms, during the Republican time, its specific features, which can be outlined more precisely for the Imperial period, the main source for this time being Vegetius. This type of spear, *verutum*, with its subtypes (*spiculum* and *vericulum*), were used starting with the Republican period (attested both literary and archaeologically). It is attested, as we have seen, during the 2<sup>nd</sup> and 3<sup>rd</sup> and, probable in the first part of the 4<sup>th</sup> century A.D. We do not know, however, examples to be dated between the 3<sup>rd</sup> and the 1<sup>st</sup> centuries B.C., fact which does not exclude their existence during this chronological interval. Thus, the pyramidal spearhead of triangular cross-section does not represent a Antonine introduction.

## CATALOGUE

1. Ilișua - southern gate<sup>50</sup>, spearhead of triangular cross-section; L = 19 cm., L.b. = 10,8 cm., d.s. = 1,1 cm. (Torma 1866, pl.XI/4, Hica 1982, p. 604 fig. 4/5).
2. Ilișua, spearhead of triangular cross-section; L = 17,2 cm., L.b. = 9,1 cm., d.s. = 1,4 cm. (Hica 1982, p. 604 fig. 4/6).
3. Ilișua, spearhead of triangular cross-section; L = 14,8 cm., L.b. = 10 cm., d.s. = 1,1 cm. (Hica 1982, p. 604 fig. 4/7).
4. Ilișua, spearhead of triangular cross-section; L = 12,7 cm., L.b. = 5,9 cm., d.s. = 1,4 cm. (Hica 1982, p. 604 fig. 4/8).
5. Ilișua, spearhead of triangular cross-section; L = 22,5\* cm., L.b. = 13,4\* cm., d.s. = 1,1\* cm. (Protase 1997, pl. LXIX/4).
6. Ilișua, spearhead of triangular cross-section; L = 22\* cm., L.b. = 11,8\* cm., d.s. = 1,1\* cm. (Protase 1997, pl. LXIX/5).
7. Gherla, spearhead of triangular cross-section; L = 18 cm, L.b. = 11,3 cm, d.s. = 1,7 cm.; dating: 170-270. (H. Daicoviciu, in *Römer in Rumänien* 120 C44, Petculescu, in *Miles romanus* 43 p. 11, Petculescu 1998 p. 188 nr. 182 pl. 23/182 ).
8. Gherla, spearhead of triangular cross-section; L = 20,1 cm, L.b. = 11,3 cm, d.s. = 1,5 cm.; dating: 170-270., (H. Daicoviciu, in *Römer in Rumänien* 120 C45, Petculescu, in *Miles romanus* 42 p. 11, Petculescu 1998, p. 188 nr. 181, pl. 23/181).
9. Gilău, spearhead of triangular cross-section, (fragment) L = 11,2\* cm., d.s. = 1,6\* cm. (Rusu 1956, p. 714 pl. I / 8).
10. Gilău, spearhead of triangular cross-section, (fragment) L = 14,6\* cm., d.s. = 1,6\* cm. (Rusu 1956, p. 714 pl. I / 9).
11. Gilău, spearhead of triangular cross-section; L = 15,9\* cm. L.b. = 7,4\* cm., d.s. = 1,4\* cm. (Isac 1997, p.107 pl.XXVI/5).
12. Porolissum - city, spearhead of triangular cross-section, L = 20 cm., L.b. = 8,5 cm., d.s. = 2 cm., dating: begining of the 3<sup>rd</sup> c. (Gudea 1989, p. 544, pl. CXXIX/16, Gudea 1997, fig. 35).
13. Porolissum , spearhead of triangular cross-section, L = 20,5, L.b. = 9 cm., d.s. = 2,2 cm. (Gudea 1989, p. 544, pl. CXXIX/17).
14. Porolissum, spearhead of triangular cross-section, (fragment), L = 12,5 cm., L.b. = 9-9,5 cm; dating - probable 3<sup>rd</sup> c. (Gudea 1989, p. 544, pl. CXXIX /19).
15. Porolissum, spearhead of triangular cross-section, (fragment) L=9.8 cm (Gudea 1989, p. 544, pl. CXXIX/18).
16. Buciumi - *principia*, spearhead of triangular cross-section; L = 19 cm, L.b. = 10,4\* cm, d.s. = 1,5\*cm. (Gudea 1972, p. 62, pl. LVIII/8<sup>51</sup>).
17. Inlăceni, spearhead of triangular cross-section; L = 18,1 cm, L.b. = 9,6\* cm, d.s. = 1,8\*cm. (Gudea 1979, p. 193, nr. II/2 fig. 17/8, p. 252 pl. XVII/8).
18. Jidava - *porta praetoria*, spearhead of triangular cross-section, L = 19 cm, L.b. = 9.6\* cm, d.s. = 2,2\* cm; (Tudor 1944, p. 78 fig. 1/4)
19. Bologa, *praetentura dextra*, spearhead of triangular cross-section, L = 16 cm., L.b. = 8,8\* cm., d.s. = 1,2\* cm. (Gudea 1977, p. 187 nr.13, pl. 23/3=25/8).
20. Bologa, *praetentura sinistra*, spearhead of triangular cross-section, L = 24 cm., L.b. = 13,1\* cm., d.s. = 1,5\* cm. (Gudea 1977, p. 187 nr. 17, fig. 23/7=25/10).
21. Bologa, spearhead of triangular cross-section, L = 15,6 cm., L.b. = 8,4 \*, d.s. = 1,5 (Petculescu 1998, p. 188 nr.184, pl.24/184).

<sup>50</sup> Torma Károly, *Az alsó-ilosvai római állótábor műemlékei*, in ErdM 3, 1864-1865 (1866), 59-60; I. Hica-Cimpeanu (n. 30), 599, n. 34.

<sup>51</sup> See N. Gudea, *Das Römerkastell von Buciumi. Führer zu den archäologischen Denkmälern in Dacia Porolissensis* nr. 2, Zalău 1997, p. 104, fig. 21.

22. Bologa, spearhead of triangular cross-section, L = 15,8 cm., L.b. = 7,4 \*, d.s. = 1,3 (Petculescu 1998, p. 188 nr.186, pl.24/186).
23. Sarmizegetusa Regia - Grăditea Muncelului, spearhead of triangular cross-section, L = 18,4\* cm., L.b. = 11.3\* cm., d.s. = 1,3\* cm., dating: 1<sup>st</sup> c. - begining of the 2<sup>nd</sup> c. (Glodariu, Iaroslavschi 1979, p. 135, pl. 69/27).
24. Racovița, spearhead of triangular cross-section, L = 19 cm, L.b. = 8,4 cm, d.s. = 2 cm.; dating: second half of the 3<sup>rd</sup> c. (Vlădescu 1983, p. 164, p. 232 fig. 101/5).
25. Romula, spearhead of triangular cross-section, L = 12,8 cm, L.b. = 7\* cm, d.s. = 1,2 cm. (Petculescu 1998, p.187 nr. 177, pl. 23/177)
26. Crâmpoia, spearhead of triangular cross-section, L = 19 cm, L.b. = 9,4 \* cm, d.s. = 1,2 cm. (Petculescu 1998, p. 188 nr. 180, pl. 24/180).
27. Mătășaru, spearhead of triangular cross-section, L = 14,4 cm, L.b. = 8\* cm, d.s. = 1,6\* cm.; dating: the second half of the 2<sup>nd</sup> c. (Bichir 1984, p. 60, pl. 58/8).

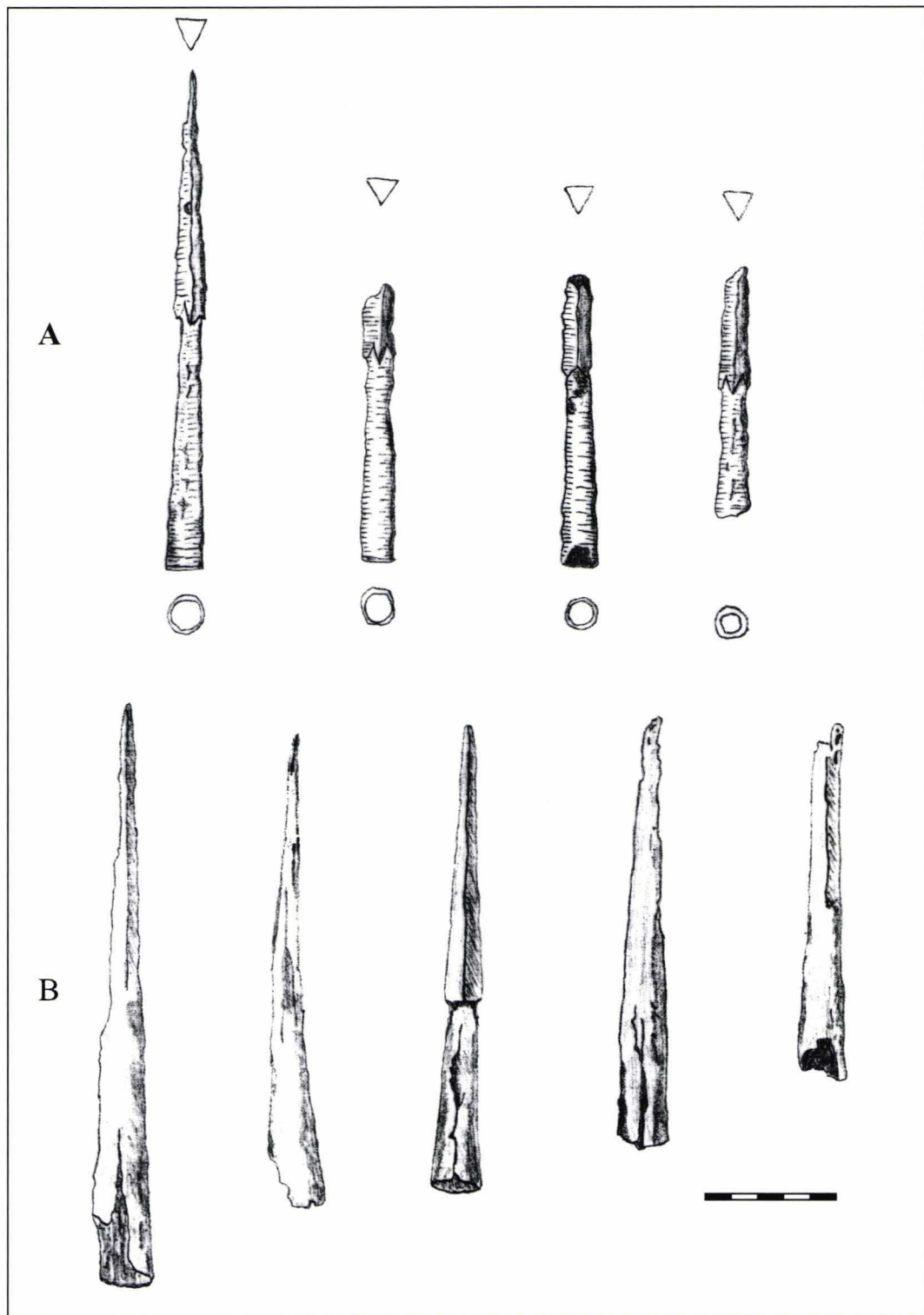


Fig. 1/A Künzing

Fig. 1/B Numantia

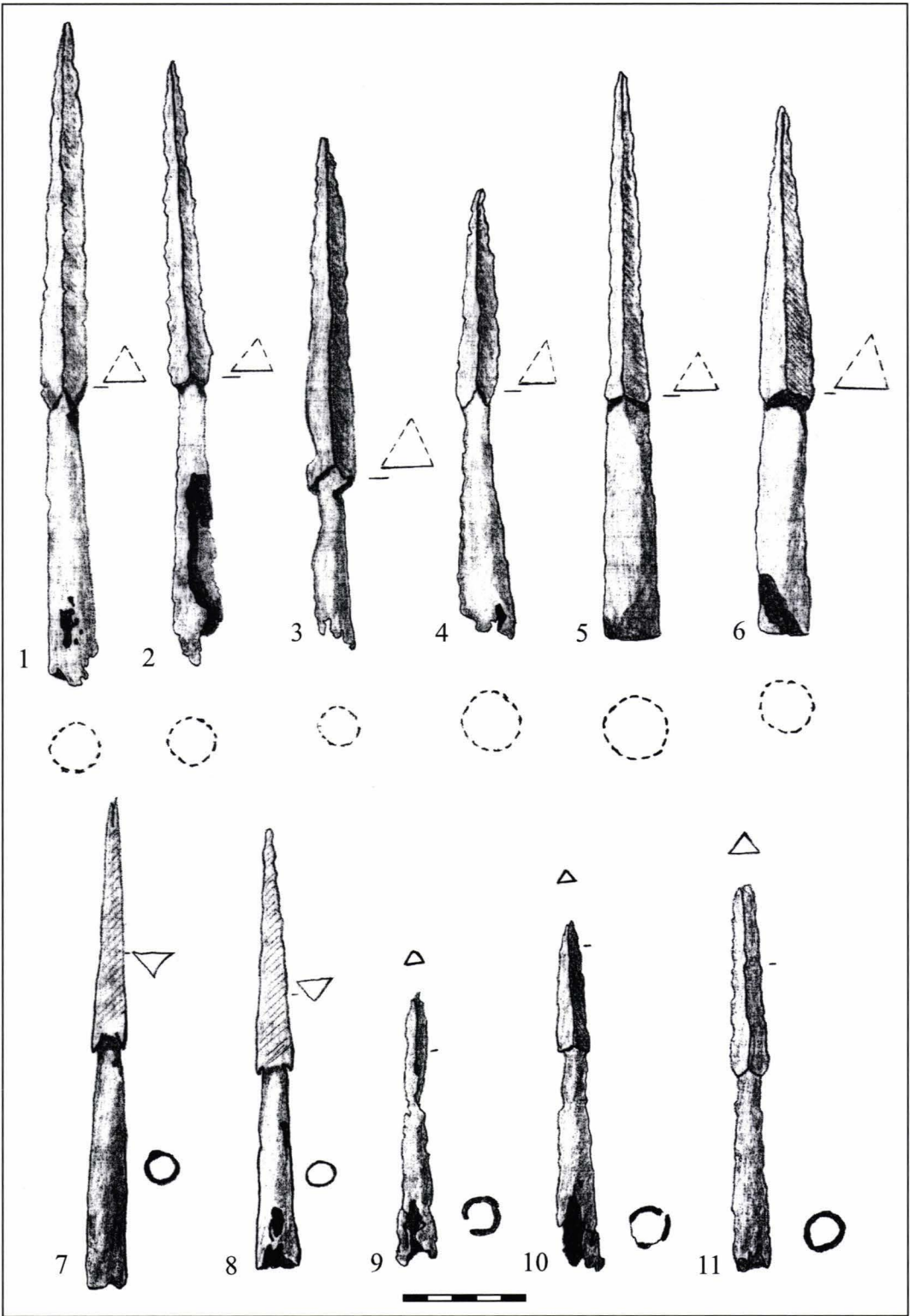


Plate 1. 1-6 Ilișua; 7-8 Gherla; 9-11 Gilău.

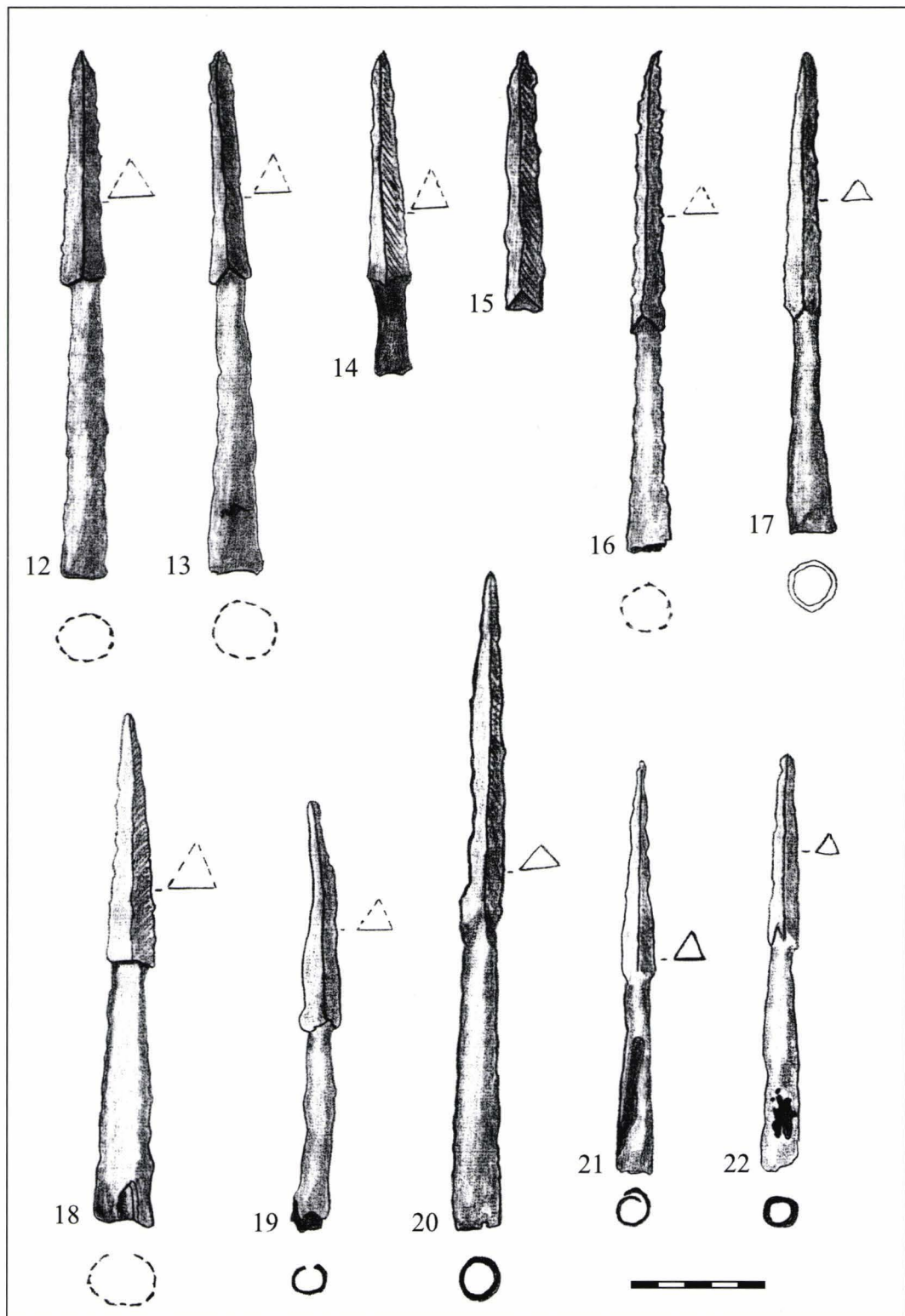


Plate 2. 12-15 Porolissum; 16 Bucium; 17 Inlăceni; 18 Jidava; 19-22 Bologa.

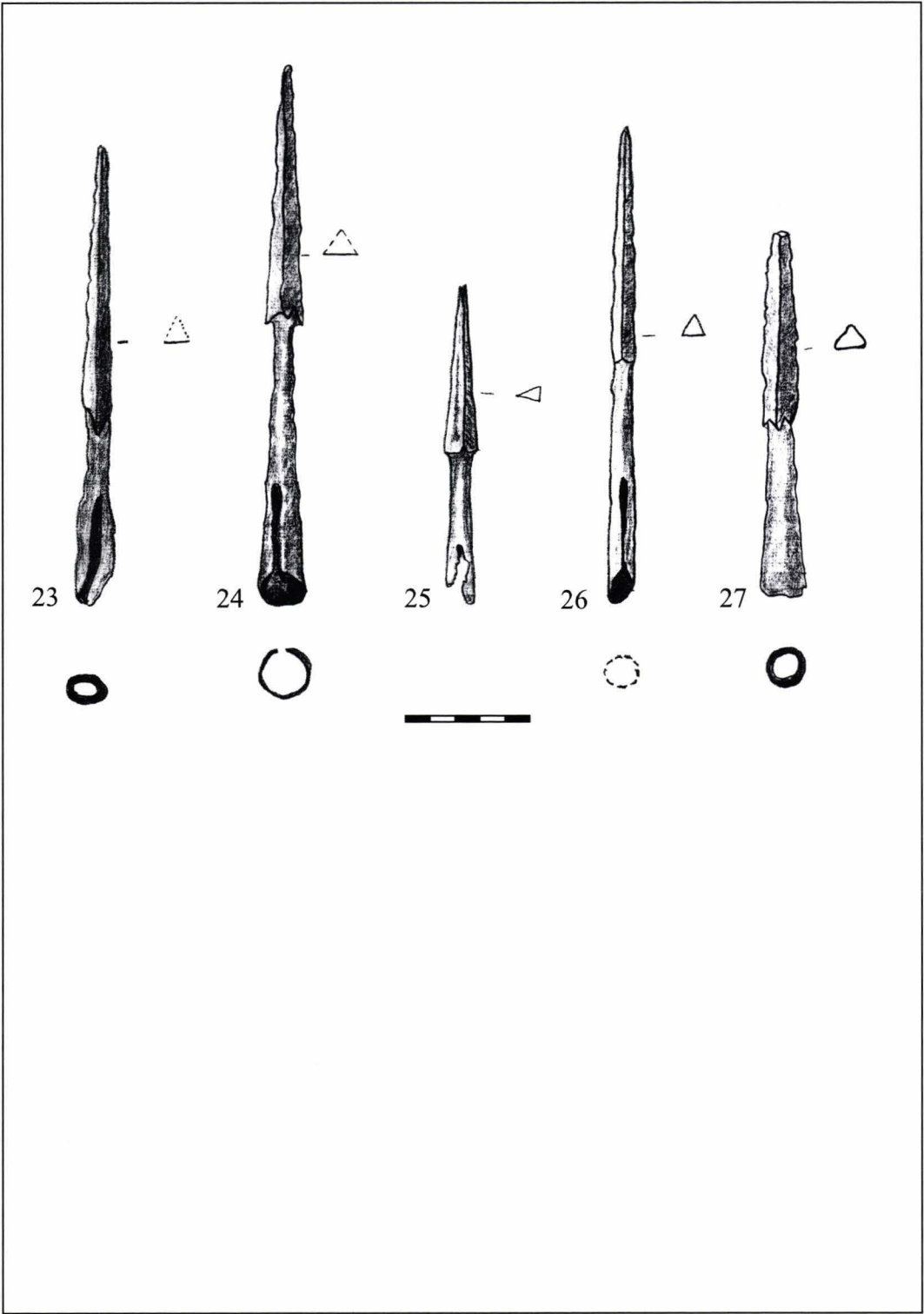


Plate 3. 23 Sarmizegetusa Regia; 24 Racovița; 25 Romula; 26 Crâmpoia; 27 Mătășaru.