

# The Wealth of the Tells: Complex Settlement Patterns and Specialisations in the West Pontic Area between 4600 and 4250 calBC

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**Abstract:** The tells in the west Pontic region have been under investigation for almost a century now, yet our knowledge concerning the social organisation of Copper Age communities is still insufficient. Prior to the discovery of the cemetery near Varna, studies on the social complexity of communities living on tells were rare. However, since the discovery of the Varna necropolis in 1972 the enormous wealth displayed in merely a few graves led to the implicit interpretation of tell-sites as proto-cities and urban centres characterised by ‘palaces’, ‘sanctuaries’ and ‘military fortifications’. Caution is advisable here since apart from two recent excavations in Pietrele and Provardia the surroundings of the numerous tell-sites have not been systematically investigated, and the settlement plans are virtually incomplete. Not a single tell-site has provided enough support to interpret houses as special buildings of a central authority. It is, therefore, impossible to match the outstanding graves in Varna with any corresponding buildings on the mounds. Unlike the wealth in graves in Varna and Durankulak, the wealth of tells is far more evenly dispersed throughout the houses. Still, the complex layout of settlements with houses in rows, separated only by narrow lanes, and with a flat area surrounding the monumental tells, point to a complex social organisation that was present centuries before urban centres appeared in the Near East and Anatolia. Craft specialisation, the application of innovative technologies and intensified communication between regions were the basis for the social transformations of the 5<sup>th</sup> millennium BC.

**Keywords:** West Pontic region, 5<sup>th</sup> millennium BC, tells, settlement patterns, specialised crafts, raw material exchange, production centres

## The Chronological and Geographical Setting

The west Pontic settlement mounds north and south of the lower Danube area belong to the youngest group of tell-sites throughout southeast Europe. Other than the tell-settlements south of the Balkan Mountains that were founded around or shortly after 6000 calBC (e.g. Tell Karanovo and Tell Azmak), the ones near the west Pontic river plains do not predate the 5<sup>th</sup> millennium BC. To our best knowledge some of the tells south of the Danube River were founded at around 4900 calBC (e.g. Goljamo Delčevo or Ovčarovo)<sup>2</sup>, whereas those north of the river probably developed only after 4750 calBC (e.g. Căscioarele).<sup>3</sup> Most of the sites are concentrated along river valleys, the highest tells being situated near the northern banks of the Danube River (Fig. 1). Other concentrations are along its tributaries and smaller rivers flowing into the Black Sea near the bays of Varna and Burgas. As shown elsewhere,<sup>4</sup> at around 4600 calBC on both sides of the Danube important social and cultural transformations appear, probably caused by innovations related to metallurgy as pointed out already half a century ago by V. G. Childe.<sup>5</sup> In the second half of the 5<sup>th</sup> millennium BC a better command of firing techniques, a more industrious extraction of raw material resources (e.g. ores, minerals, salt), better construction techniques (erection of two-storey buildings) can be observed together with optimised storage modalities (e.g. in *pithoi*), as well as

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<sup>2</sup> Görzdorf – Boyadziev 1996.

<sup>3</sup> Dumitrescu 1974.

<sup>4</sup> Reingruber, in print.

<sup>5</sup> Childe 1944; Childe 1958.

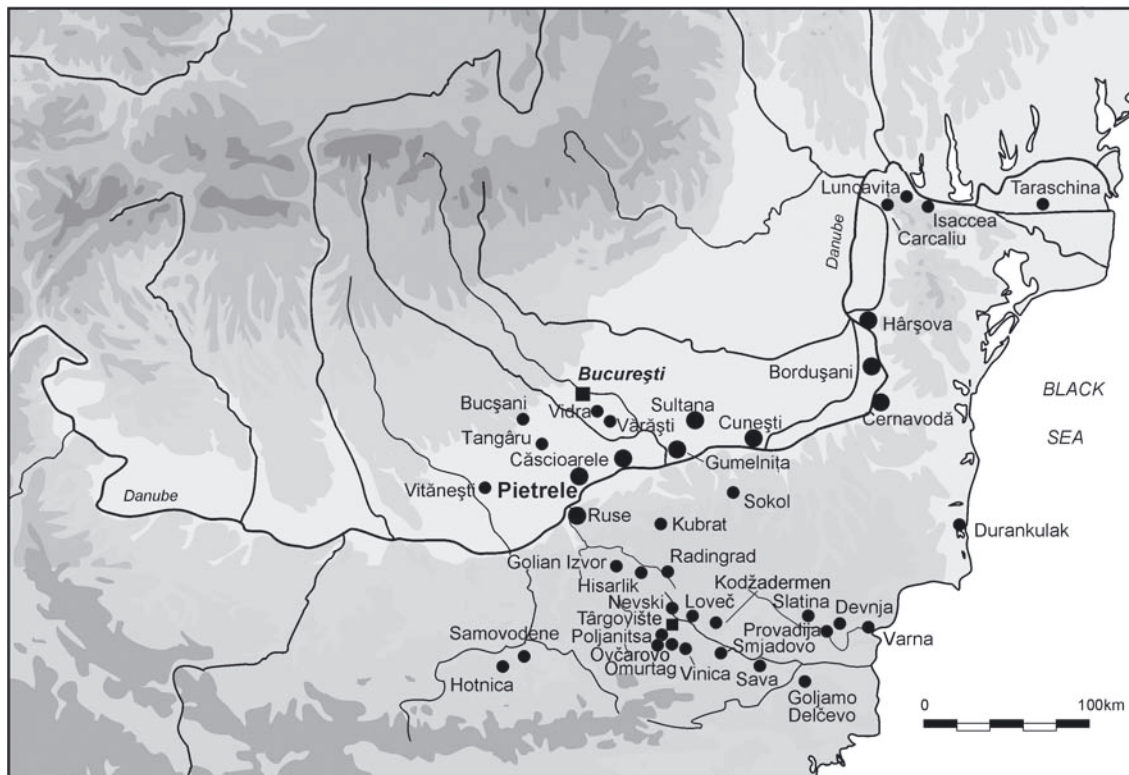


Fig. 1 Map of the lower Danube area (W. Rust – A. Reingruber).

new manufacturing techniques and innovative technologies (e.g. lever technique for blade production). Around c. 4250 calBC, these progressive traits, elude the archaeological record in the entire area of the eastern Balkans. The simultaneousness of their disappearance is one of the most intriguing and still unsolved problems in Balkan prehistory, each generation of archaeologists putting forward its own explanations deriving from the respective *zeitgeist*: after World War II invasions and conflicts were proposed by M. Gimbutas, during the 1980s climatic catastrophes were invoked by H. Todorova, after the fall of the Iron Curtain cultural transformations were put forward by Th. Link.<sup>6</sup> More recently, combinations of different factors are advanced, for example, social conflict and economic problems, and/or climatic and cultural deterioration.<sup>7</sup>

Nonetheless, between 4600 and 4250 calBC, the length of 350 years at least, indications are strong for a well organised society, not merely horizontally but also vertically structured. Complex settlement systems, the wide distribution of raw materials and the circulation of prestige goods circumscribe a vast area of highly interactive communities that surpasses the confinements of the map published by Jan Lichardus.<sup>8</sup> When focussing on two of the most important innovations of the 5<sup>th</sup> millennium, early metallurgy and a better control of firing techniques, especially the firing of graphite painted pottery, similar traits can be broadly observed from as far as the Strymon- and Axios/Vardar valleys in the southwest and the Morava Valley in the northwest, to the Black Sea coast in the east. On the other hand, in the area of Lichardus' Kodžadermen-Gumelnița-Karanovo VI (KGK-VI)-complex, sites are not evenly dispersed, but rather form clusters according to their geographical positions. North of the lower Danube valley tells are located at equal distances of 20–30km. On today's maps, generated after the drainage of the Danube meadow in the 1960s,

<sup>6</sup> Gimbutas 1977; Todorova 1989; Link 2006.

<sup>7</sup> Weninger et al. 2009; Windler et al. 2012.

<sup>8</sup> Lichardus 1988, 85, fig. 43.

these sites appear to be isolated settlements. Yet in prehistory they were all connected by a vast palaeo-lake fed by the Danube and its northern tributaries, the Argeş and the Mostiştea.<sup>9</sup> Farther upstream, also in a lake-rich region, sites attributed to the Bolgrad-variant of the KGK-VI-complex cluster north and south of the river bend shortly before the Danube delta.

Another cluster of sites forms along the Kamčija and Provadia rivers as well as near the bays of Varna and Burgas. In the latter region investigations recently commenced in Akladi Cheiri under the direction of Petar Leshtakov and at Kozareva Mogila guided by Petya Georgieva.<sup>10</sup> These sites will add important information to the broader picture, especially since they are in the vicinity of copper mines in the Burgas-Strandža area. Located close to the freshwater lake and the inlet near the modern city of Varna is the famous homonymous cemetery; however, no settlements can be directly connected to it, since they are all submerged in the waters of Lake Varna.<sup>11</sup> Thus, it is indeed noteworthy that most of the sites previously thought of as favouring riverside locations now should be reconsidered as potential lakeside settlements, some probably comparable to those of Ezerovo IV in Lake Varna.<sup>12</sup>

### Case Studies: Settlement Layouts and Specialised Working Areas

Prior to 1972, studies investigating the organisation of Eneolithic society in the 5<sup>th</sup> millennium in the Balkans seemed superfluous since village communities were regarded as relatively egalitarian and/or an offshoot of the more elaborate societies in the Aegean. However, as early as 1969, Sir Colin Renfrew reflected on the supremacy of metal production in the Balkans,<sup>13</sup> preparing the grounds for the ‘Ex Balcanae Lux’-model.<sup>14</sup> Three years later the spectacular finds from the cemetery near Varna thoroughly changed the comprehension of Eneolithic communities. Some of its 307 graves were furnished with a multitude of artefacts made of gold and copper. The majority of these artifacts derive from cenotaphs whereas graves with skeletons only held a smaller fraction. Also striking was the different placement of the bodies of males and females: the former were buried in an extended supine position, while the latter were placed in *hocker* position.<sup>15</sup>

The surplus wealth in some of the graves overshadows the ‘quotidian’ wealth that could be expected in the dwellings. Therefore, one aspect in this contribution will be the analysis of the stratigraphically and chronologically well-defined prestige objects from tell-sites, which allow us to explore the social organisation of the communities – whether they are labelled ‘proto-cities’<sup>16</sup> or even ‘urban centres’.<sup>17</sup>

How a settlement belonging to such a sophisticated sepulchral society was organised can only be answered – for lack of sites in the immediate neighbourhood of Varna – with comparisons with more distant but coeval sites. Therefore, the following three sites will be discussed below: Poljanica near the Kamčija River, Pietrele near the Danube River and Provadia near the Black Sea coast.

<sup>9</sup> Benecke et al. 2013, figs. 1, 3.

<sup>10</sup> Georgieva 2003; Leshtakov 2010; Leshtakov – Klasnakov 2010.

<sup>11</sup> Angelova, forthcoming; Filipova-Marinova 2011.

<sup>12</sup> Todorova – Tončeva 1975, 30–46.

<sup>13</sup> Renfrew 1969, 12–47; Renfrew 1971, 275–282.

<sup>14</sup> Todorova 1978, 1.

<sup>15</sup> Slavchev 2010, 200.

<sup>16</sup> Todorova 1978, 55; contra: Chapman 2010, 78.

<sup>17</sup> Nikolov 2012.

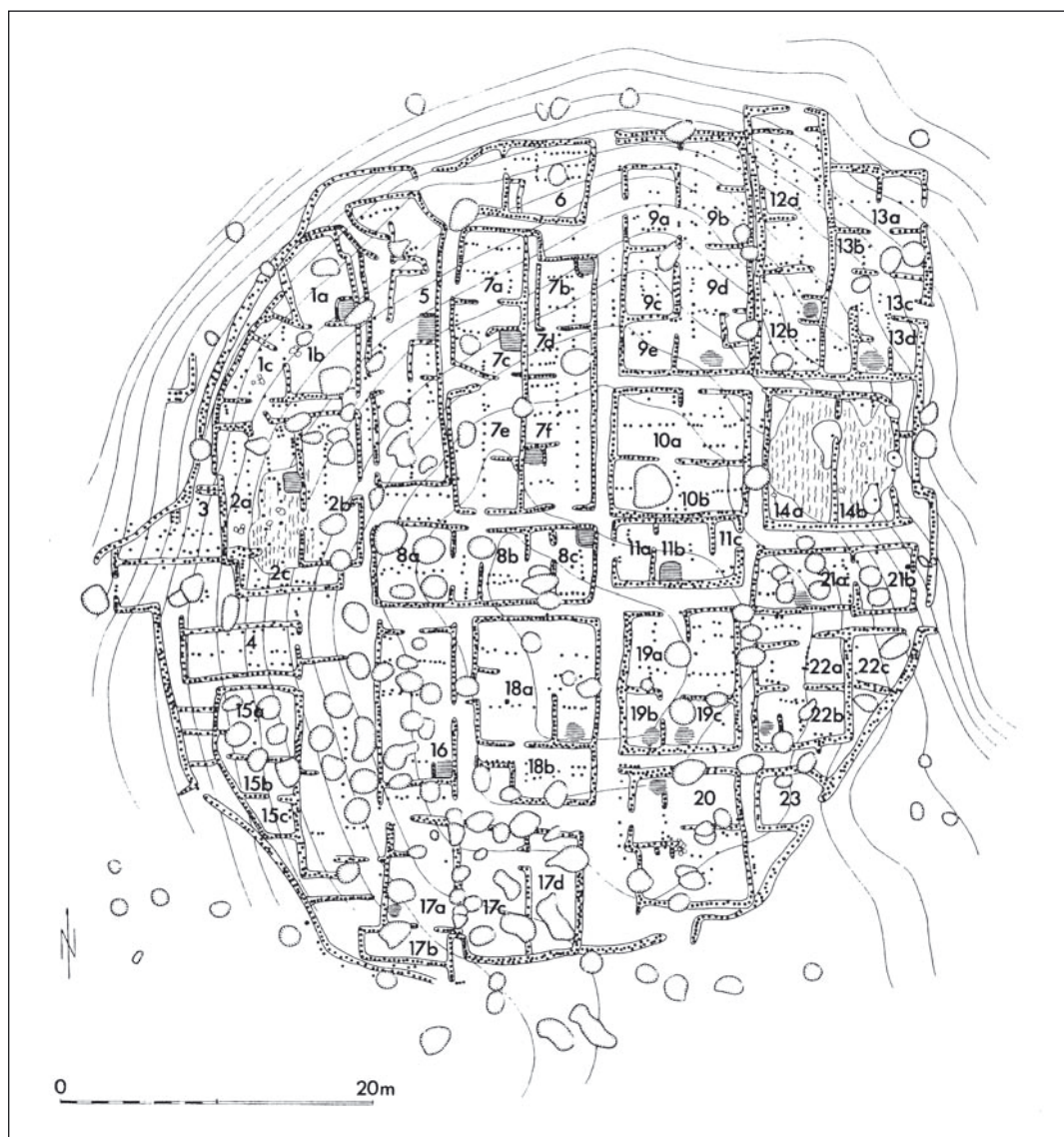


Fig. 2 Poljanica level VIII (after Todorova 1982, fig. 173).

### Poljanica<sup>18</sup>

Only few sites north of the Danube River valley have been entirely exposed: not only are the mounds on the northern banks much higher and larger than those in the Kamčija River basin, their excavation requires enormous effort and energy. Excavation methods differed as well, since the emphasis of archaeologists in Romania was on establishing a relative chronology with the help of small and deep soundings (Gumelnița) or by 1–2m narrow but up to 20m long sections (Sultana). Only the upper horizon of Căscioarele has been thoroughly investigated,<sup>19</sup> but unfortunately never published.

The first extensive knowledge of the spatial organisation of tells was provided by H. Todorova in Poljanica between 1973–1975. The only 3m high tell was entirely excavated. Seven of the

<sup>18</sup> Todorova 1982, 144–165.

<sup>19</sup> Dumitrescu 1965.

eight habitation levels belong to the first half of the 5<sup>th</sup> millennium, level VIII to the beginning of the KGK-VI complex (Fig. 2).<sup>20</sup> The carefully planned settlement of Poljanica is surrounded in different phases by trenches with palisades. The rectangular layout of the site allows for narrow lanes, keeping free spaces between houses to a minimum. The houses were arranged in clusters, each 1–2 room house contained ovens. Houses did not notably differ from one another, neither by construction techniques nor by facilities or finds. J. Chapman pointed out the spatial and also social complexity, ‘[...] based upon the differentiation of house space, with larger families more carefully controlling access to rooms and developing specialised uses for them – as sites for hospitality, domestic ritual, food preparation, food storage, tool making, and sleeping’.<sup>21</sup>

According to the calculations proposed by Todorova for tells like Poljanica and also for the nearby tell Ovčarovo, each settlement was inhabited by some 60 to 100 persons.<sup>22</sup> In her view these sites were of ‘standard size’ in the Eneolithic.<sup>23</sup> Nonetheless, it is difficult to conceive such small communities as the bearers of the complex and stratified social system as it appeared in the rich cemetery of Varna.

#### Pietrele<sup>24</sup>

Thanks to modern prospection methods it is now known from the site of Pietrele in Romania that the tell itself represented only the prominent part of the residential area: Măgura Gorgana, the mound, is surrounded by a vast flat settlement (Fig. 3).<sup>25</sup> Both to the west and to the northeast of Măgura Gorgana several burnt and unburnt houses were discovered that are coeval with the building horizons on the tell itself. However, some of the structures are much older.<sup>26</sup> Thus, the tell is only part of a far more complex settlement layout. The exact dimensions of the whole settlement have yet to be fully determined; to date 8.2ha have been investigated geomagnetically. Nonetheless, it is clear that this discovery enormously amplifies our estimation of the sites’ inhabitants. The previously established figure of only some 60 people living and producing ‘stuff’<sup>27</sup> has to be recalculated and multiplied. In only ten excavation campaigns 13.5 tons of pottery including 485,000 sherds and 1640 vessels were counted, weighed and processed. Furthermore, the flint stone collection of 12,000 is huge, and prominent among the other c. 8000 small finds are objects made of stone and bone as well as copper and *Spondylus*.<sup>28</sup> Such an outstanding wealth of objects, even if divided into the six settlement phases excavated until 2013, certainly surpasses both the potential and the needs of only some 60 people living per phase.

Through large excavated areas on the tell Măgura Gorgana, it can now be established that not all of the houses were used for the same activities and that not all of them contained the same inventories: houses from the northern row are characterised by grinding, milling and cooking areas (Fig. 4),<sup>29</sup> and loom installations;<sup>30</sup> they also served as depositories for flint provisions.<sup>31</sup> The houses on the southern row, on the other hand, yielded most of the fishing and hunting equipment.<sup>32</sup> Knowledge of Eneolithic societies will be significantly enriched once comparisons between inventories from the tell and those from the flat settlement around it are fully analysed.

<sup>20</sup> Todorova 1982, 145.

<sup>21</sup> Chapman 2010, 80.

<sup>22</sup> Todorova 1978, 55; Todorova 1982, 65.

<sup>23</sup> Todorova 1982, 54.

<sup>24</sup> Hansen et al. 2004–2012.

<sup>25</sup> Hansen et al. 2005, 342–346; Reingruber et al. 2011a, 117–129.

<sup>26</sup> Hansen, in print, with recommended literature.

<sup>27</sup> Miller 2009.

<sup>28</sup> Hansen, in print.

<sup>29</sup> Reingruber 2010, 157–174.

<sup>30</sup> Hansen et al. 2008, figs. 15–16.

<sup>31</sup> Hansen et al. 2007, 59–69.

<sup>32</sup> Hansen, in print.

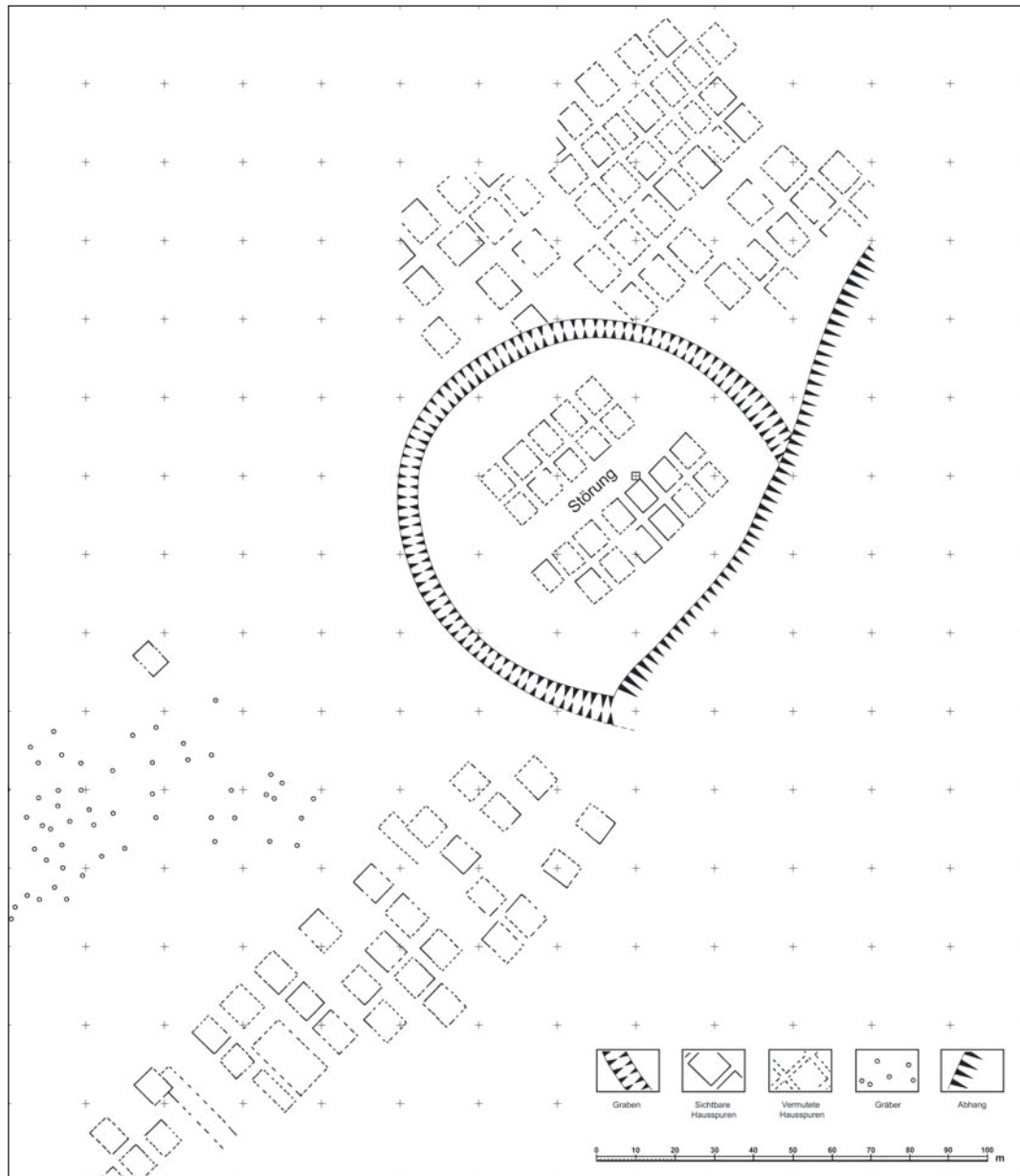


Fig. 3 Pietrele: Interpretative plan based on the geomagnetic investigations (after B. Song in Hansen et al. 2006, fig. 7).

Initial insights point to an uneven distribution of prestige goods like copper objects and *Spondylus* ornaments. Also, access to certain raw materials (flint, graphite bars) seems to have been restricted to the inhabitants of the tell. Therefore, not only on the tell itself can differences between houses be ascertained, but even more pronounced differences emerge when comparing households from the tell with those in its flat surroundings.<sup>33</sup>

In Pietrele indications are strong for a heterogeneous Eneolithic society, organised in equitable groups that were further structured into specialised crafts that required special skills and training. Among these crafts, pottery production – especially the firing of vessels with graphite paint in re-oxidizing atmospheres – is only one example of the specialised activities that were carried out

<sup>33</sup> Reingruber 2012, 139–151.

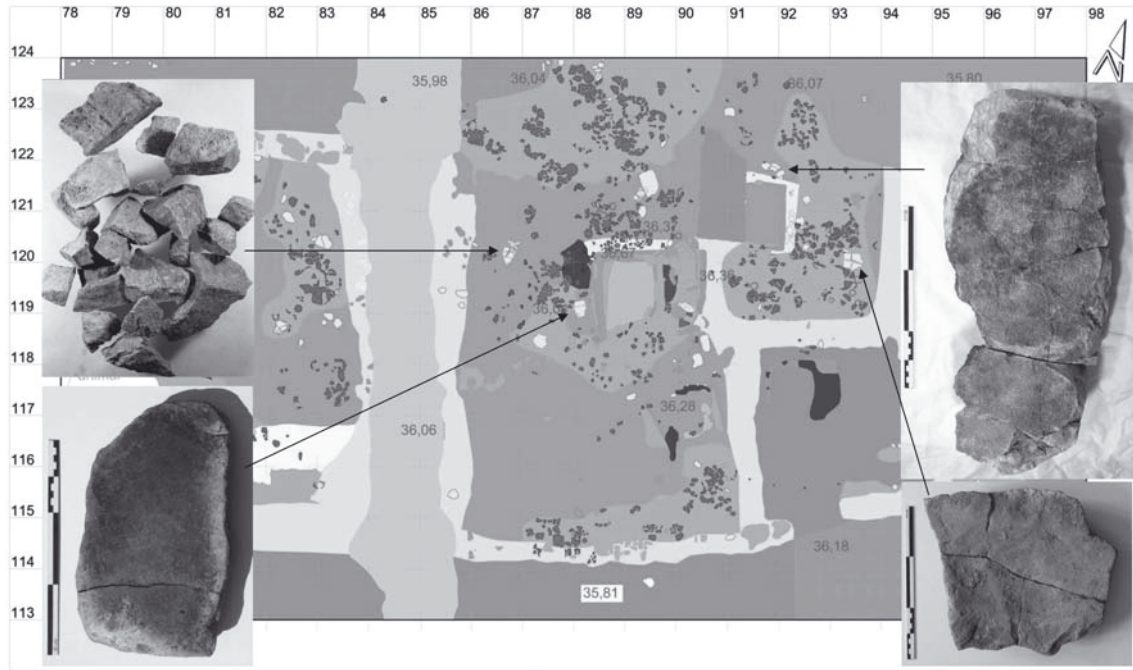


Fig. 4 Pietrele: Northern row of burnt houses in trench B with buildings separated by a lane, containing clay installations, millstones and a total of 321 vessels (digital plan: U. Koprivc, photos: S. Hansen).

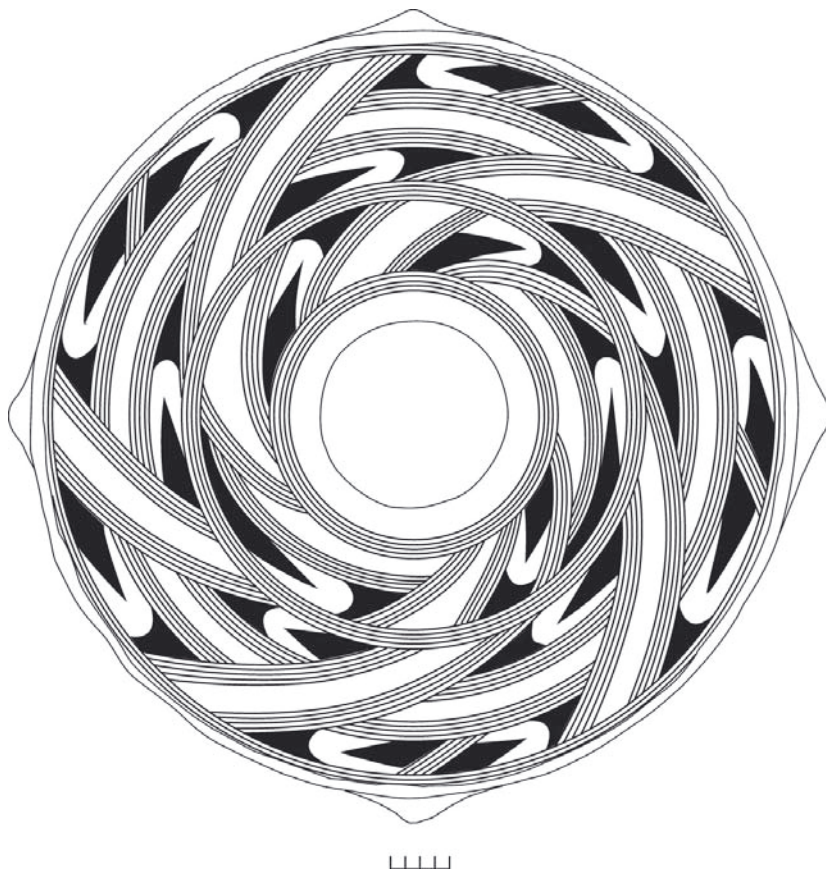


Fig. 5 Pietrele: Graphite painted bowl from trench S (digital drawing: W. Rust – A. Reingruber).

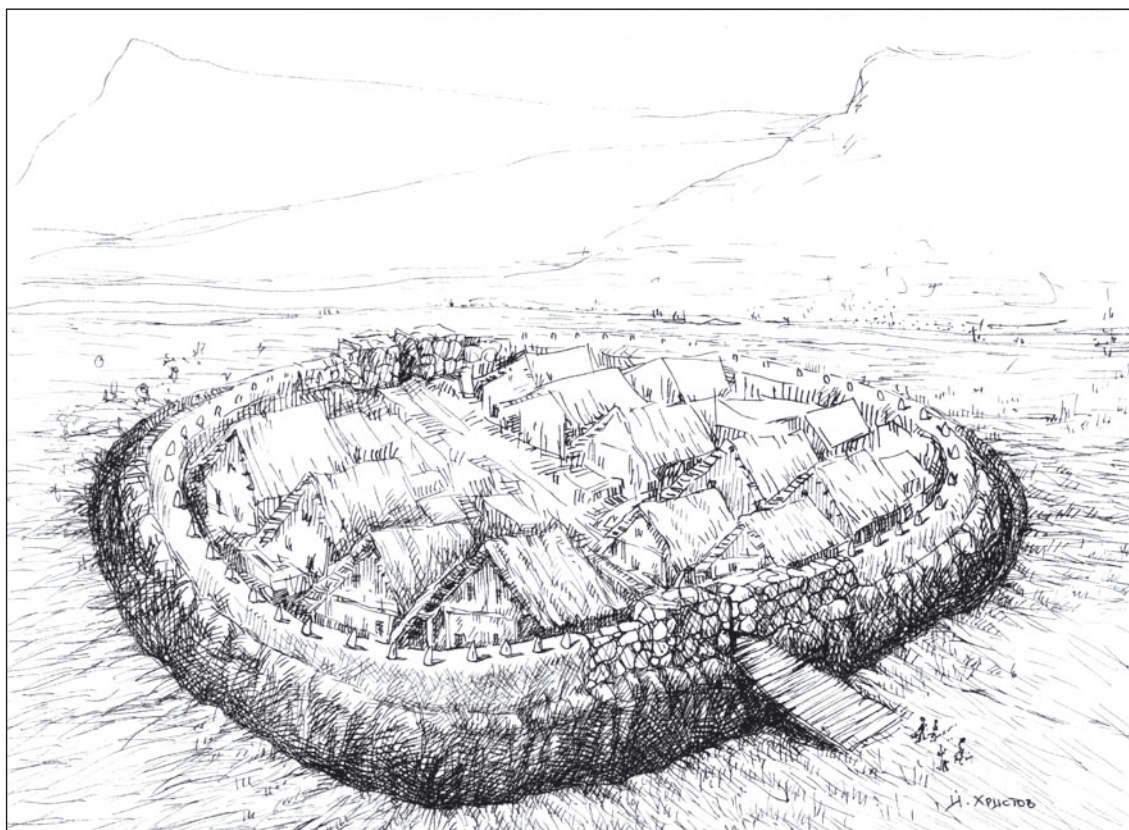


Fig. 6 Provadia: Proposed reconstruction of the site (after Nikolov 2010a, book cover).

at the site.<sup>34</sup> Furthermore, the construction of 120cm high storage vessels<sup>35</sup> or the sophisticated outline of motifs in thin lines, resulting in patterns in millimetre precision (Fig. 5) are certainly not mundane. Thus, pottery of the Gumelnița type is no longer just a well-crafted product but far more the result of an improved, superior and perfected technology. Such sophisticated knowledge must have led to a higher status of certain individuals.

#### Provadia<sup>36</sup>

However, not only specialisations within a complex village community characterise the 5<sup>th</sup> millennium BC in the lower Danube area. Recently, at Provadia, a settlement near the homonymous river close to the coast was interpreted as being the first prehistoric town specialising in salt extraction. Unlike the two sites presented above, in Provadia houses were built of stone, and the site was surrounded by a fortification wall with bastions reaching more than 3m in height (Fig. 6).<sup>37</sup> In its immediate neighbourhood, only 150m away, five salt making installations were discovered, one of which measures c. 10 × 8m and is 1.85m deep. V. Nikolov interprets them as ‘industrial’ brine-evaporation installations that were filled with bowls containing the brine; the remaining space between the pots was filled with wood whose heat while burning caused the

<sup>34</sup> Reingruber et al. 2011b, 48.

<sup>35</sup> Hansen et al. 2011, 59, 63, figs. 8–11.

<sup>36</sup> Nikolov 2010a; Nikolov 2012.

<sup>37</sup> Nikolov 2012, 29.



evaporation.<sup>38</sup> Production bowls consist of two types: a deep biconical bowl for brine-evaporation in ovens, and coarse large conical brine-evaporation tubs used for the process of evaporation in special pits.<sup>39</sup> The end product must have been a hard conical salt cake ready for transport. Briquetage middens contained only objects related to the production process, suggesting mass production. It seems that in Provadia, apart from inter-communal specialisations in certain crafts, a large part of the community was dedicated to salt production, not only for its own needs but also for exchange.

### Before Urbanisation: Specialised Production Centres

V. Nikolov advanced several criteria for defining Provadia as a prehistoric town with special status since Provadia represented a centre in a farming region, a centre of specialised production and trade, and a bureaucratic centre for organisation and management that needed fortification walls suggesting it may have also functioned as a military centre.<sup>40</sup> He further states that: '[...] the Varna Lake community not only managed to provide for their food all round the year by farming, fishing and hunting ... but also to put aside sufficient surplus for trade'.<sup>41</sup>

Nonetheless, one main point for defining an urban centre relates to the question of whether the communities provided their own subsistence or had to acquire additional staple foods and supplies from villages beyond their territories.<sup>42</sup> If the latter holds true, this would require a complex organisation and management with special buildings for staples and individuals for planning, surveying and organising the process of relocation and redistribution. So far, no such institutionalised administrative centres can be demonstrated at any of the tell-sites. Certainly, the sites mentioned attest a complex social organisation with storage facilities like *pithoi*, probably serving a larger group, but these sites can hardly be considered urban centres.

For the time being, a hierarchical settlement pattern cannot be demonstrated for this region. Indeed, Pietrele has a sophisticated settlement plan, but other tell-sites must be investigated as thoroughly as Pietrele before a pattern of any kind can be established. Provadia with its elaborate defensive system is nonetheless not a unique site: Sushina, Shumen district, also has a stone-built defence system that dates to the middle and late Eneolithic.<sup>43</sup> There, a semicircular bastion, with a diameter of 3m and a preserved height of 3.5m at the centre of the wall, protected the western flank of the settlement. Furthermore, stone buildings are likewise known from the coastal sites of Durankulak<sup>44</sup> and Năvodari.<sup>45</sup> Todorova labels some of the houses in Durankulak as 'palaces' or 'sanctuaries'.<sup>46</sup> According to C. Lichter, such labels are not justified.<sup>47</sup> It seems as if stone constructions might be typical for the Varna Culture, deriving from the preceding Hamangia Culture.<sup>48</sup> Therefore, before a firm analysis establishes a settlement hierarchy, we may not speak of 'urban centres'. Nevertheless, the complex settlement patterns of the Late Eneolithic are matched by a high degree of specialisations in the settlements.

<sup>38</sup> Nikolov 2012, 14–27, esp. 22.

<sup>39</sup> Nikolov 2012, 16, 18, 26, figs. 7, 17–18.

<sup>40</sup> Nikolov 2012, 63–65.

<sup>41</sup> Nikolov 2012, 58.

<sup>42</sup> For discussions on this topic I am indebted to O. Joumarin.

<sup>43</sup> Personal communication and presentation by S. Chohadžiev in Athens, June 2013.

<sup>44</sup> Todorova 2002a, 15, fig. 8.

<sup>45</sup> Voinea 2004–2005, 36, fig. 1.

<sup>46</sup> Todorova 2002a, 12.

<sup>47</sup> Lichter 1993, 82.

<sup>48</sup> Boyadžiev 2004, 10.

### Regional Resources and New Technologies

On the other hand, when comparing different regions in view of the availability of and closeness to natural resources interesting results attest the high degree of specialisations; not only inside a well-arranged village community but also in regionally specialised communities. For example, salt or rather brine deposits were extracted in the region close to the Black Sea, e.g. Provadia. In Nikolov's view, trade in this commodity would explain the wealth displayed in some of the Varna graves located only 35km away, implying that the whole region benefited from the salt production.<sup>49</sup>

#### Flint deposits

A similar trend is visible in access to flint deposits. As shown by F. Klimscha, most of the flint axes were found in the tell-sites close to the Danube River (Fig. 7). The farther away a site, the fewer flint axes are reported.<sup>50</sup> This holds true for sites south of the Balkan Mountains, west of the Olt and Jantra rivers and north of the Carpathians where only single axes were found, probably imported from the Danube area.<sup>51</sup> The oldest finds date to 4700–4600 cal BC at Radovanu but they become more numerous in Gumelnița A1 with their peak reached in the phase Gumelnița A2. Most of the artefacts were discovered at the sites of Pietrele, Căscioarele, Gumelnița, Sultana, Boian and Cunești north of the Danube River, followed by sites close to tributaries of the Danube in the north (e.g. Tangâru, Bucșani, Jilava, Vidra, Vărăști and Radovanu).<sup>52</sup> Axes also appear in the Dobrogea and farther north, close to the Cucuteni area in Lișcoteanca and Brăilița. Interestingly, the only find from a grave stems from Casimcea.<sup>53</sup> South of the Danube several such tools are reported from Ruse<sup>54</sup> and from sites around Razgrad.<sup>55</sup> The arch depicted by the sites between the modern cities of Giurgiu and Călărași in the north and Ruse and Șumen in the south is surrounding exactly the area of the high quality flint known as Luda Gora.

In the coastal areas, axes are almost completely absent, with occasional examples appearing only in Goljamo Delčevo and Sava.<sup>56</sup> Even fewer flint axes were found south of the Balkan Mountains. One stray find was recovered in the area of Stara Zagora and one flint axe is from Tell Azmak.<sup>57</sup> Therefore, it seems likely that the technology of producing flint axes retouched on both sides has its origins in the lower Danube region and from there the products – and also the knowledge – were 'exported'.

Most likely, flint axe specialists produced up to 40cm long 'superblades'<sup>58</sup> (Fig. 8) using the same deposits of high quality flints.<sup>59</sup> Blade production is a very ancient craft, developed dur-

<sup>49</sup> Nikolov 2010b, 487–501.

<sup>50</sup> Klimscha 2007, 275–305. It is interesting to note that no flint-axes were found in the cemeteries of Durankulak and Varna. In Durankulak (Todorova 2002b, tabs. 1–203) most of the stone celts belong to graves of phases Hamangia I–III; the antler-axes with few exceptions only to graves dating to Hamangia IV–Varna I; the stone hammer axes started with the Varna Culture and only in Varna III do the two copper-axes appear (copper celts were dated to Varna II and III).

<sup>51</sup> Klimscha 2007, fig. 8. Klimscha interprets these few finds as imports. On the other hand, a cluster of flint axes is evidenced in the area of the Cucuteni-Tripol'e Culture where this kind of tool was probably imitated (Klimscha 2007, 304).

<sup>52</sup> Klimscha 2007.

<sup>53</sup> Govedarica 2004, 104–105, pl. 19.

<sup>54</sup> Georgiev – Angelov 1952, 125, fig. 92; Černakhov 2009, 53, cat. nos. 23–24.

<sup>55</sup> Jungsteinzeit in Bulgarien 1981, 106–107.

<sup>56</sup> Mircev – Zlatarski 1960, 21, fig. 40; Todorova et al. 1975, 205, pl. 92.

<sup>57</sup> Kalchev 2005, 13.

<sup>58</sup> Sirakov 2002, 218: blades longer than 20cm are labelled 'superblades'; blades between 15–20cm are called 'long blades'.

<sup>59</sup> Klimscha 2011, 263 suggests that the chaîne opératoire might have been the same, since the block of raw material for axes must have been over 20cm long.

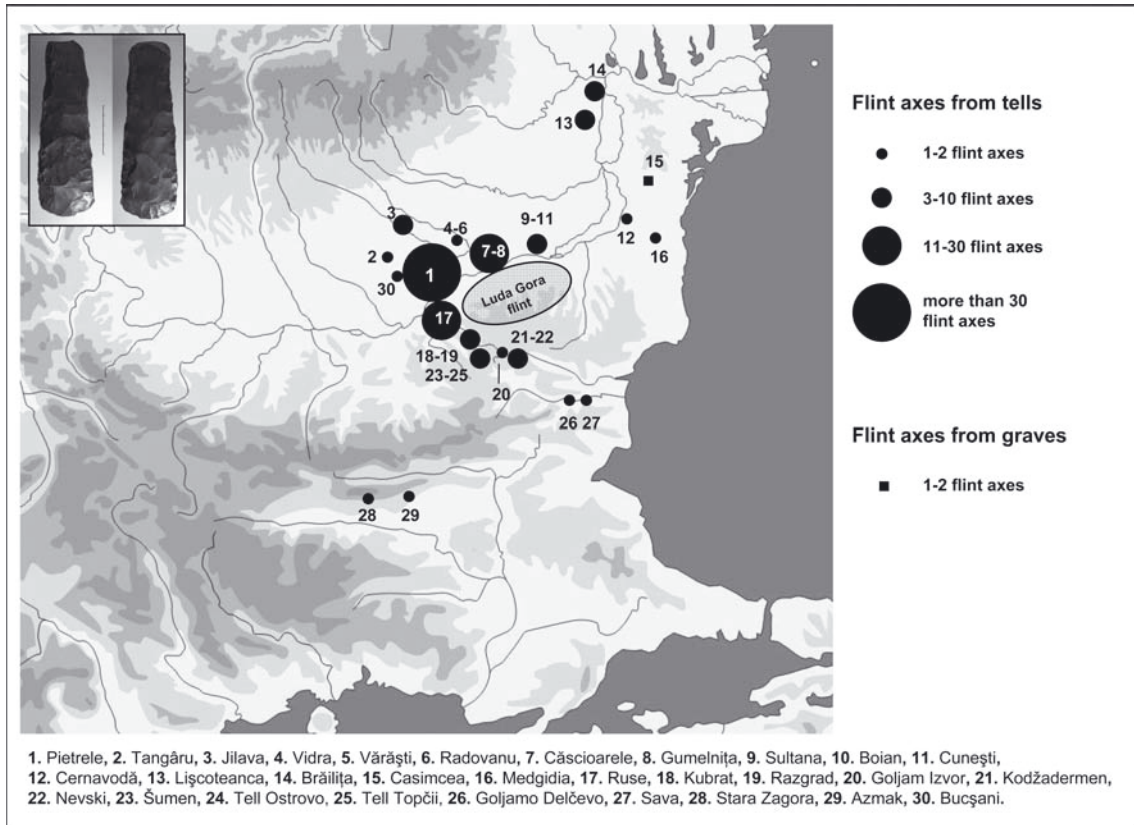


Fig. 7 Distribution of flint axes (photo of a flint axe from Pietrele: S. Hansen).

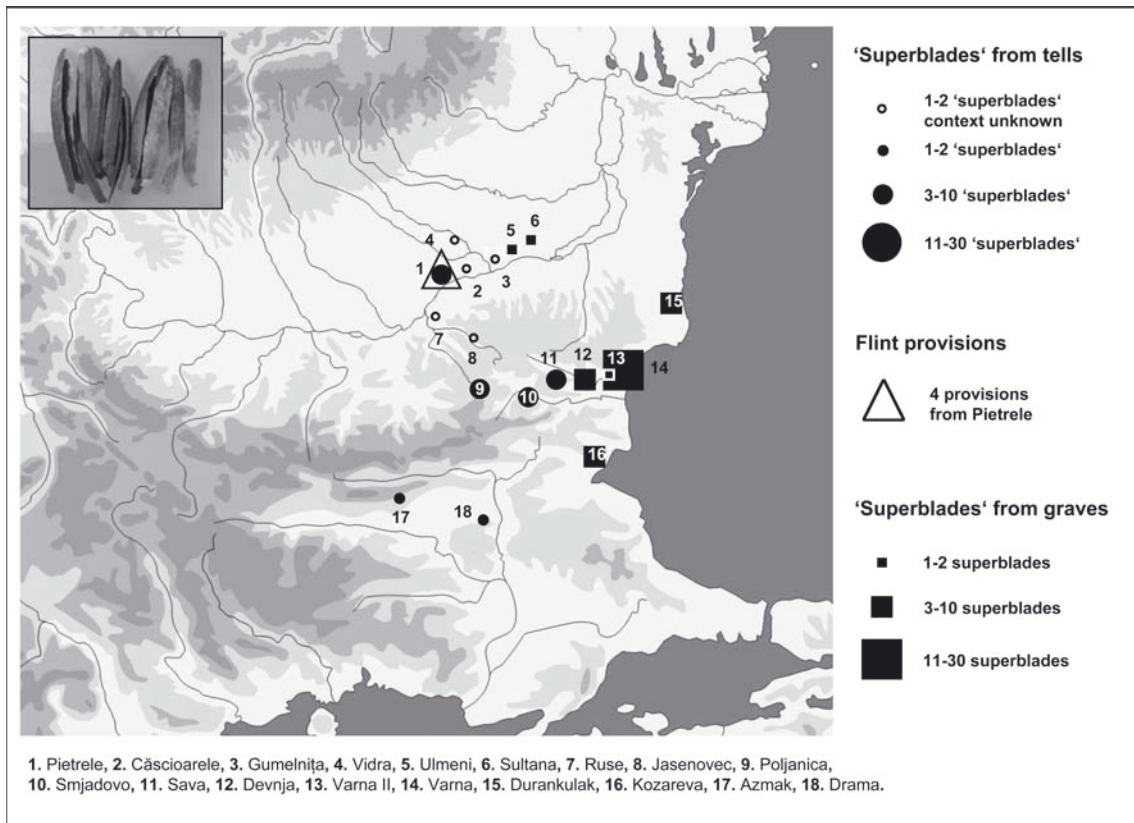


Fig. 8 Distribution of 'superblades' (photo of a provision in Pietrele: S. Hansen).

ing the Late Palaeolithic. Broad and strongly curved blades were obtained by applying direct or indirect percussion. In the Neolithic, the newly developed pressure technique allowed the production of regular, longer (since straighter) and also more narrow end products. Perfecting this technique probably by using a lever, as suggested by J. Pelegrin and N. Sirakov,<sup>60</sup> blade production resulted in considerably longer and straighter end products. Where exactly this technique was invented is difficult to assess,<sup>61</sup> but most of the finds derive again from the tell-sites along the lower Danube River. These ‘superblades’ were not the tool itself but the ingenious supply ready to be cut into fragments of various sizes, leaving the individual user to decide on the length of the final tool.

Exceptionally long blades measuring 38 to 44cm were found in the cemetery of Varna, mostly as single blades or in pairs.<sup>62</sup> From the 80 pieces gathered from literature<sup>63</sup> and museum visits,<sup>64</sup> 43 blades were recovered from graves and 30 in the settlements of Azmak,<sup>65</sup> Drama-Merdžumekja, Pietrele, Poljanica, Sava and Smjadovo. The context of additional seven pieces is not known. Most of the finds derive from Pietrele. Their length varies between 20 and 28.5cm. Five were found as individual pieces in different houses while three were part of a cache kept in a house – with one exception they all were located in trench B. Four other reserves, with mostly long blades (shorter than 20cm) can be additionally regarded as raw material supplies for blade production as attested by the fifth cache of blade fragments found in a ceramic vessel in the same level.<sup>66</sup>

Judging by the provisions and the multitude of flint axes found in Pietrele,<sup>67</sup> its inhabitants certainly had direct access to flint sources. Considering the vastness of the palaeolake directly south of Pietrele, – its expanse is calculated to more than 500km<sup>2</sup> by Dirk Nowacki and Jürgen Wunderlich<sup>68</sup> –, the deposits were easily reached by boat. The lake probably did not extend very far to the south of the Danube River; however, the area of Ravno and Kriva Reka, where flint sources have been located by Ch. Nachev,<sup>69</sup> is only 40km south of Pietrele. According to I. Gatsov and P. Nedelcheva, indications for the production of ‘superblades’ at the site itself are lacking, but it is conceivable that specialists from the northern banks of the palaeo-lake took regular trips by boat to the southern areas, returning with already prepared provisions of high quality flint.<sup>70</sup>

Only few sites with ‘superblades’ are well dated, eminent among them is Pietrele; long blades between 15–19cm are present there around 4500 cal BC, whereas superblades longer than 20cm do not appear in the settlement until c. 4400 cal BC. This evidence is supported by results from the cemetery of Durankulak, where in the Late Neolithic/Early Eneolithic pressure technique is observed, but only in the late Eneolithic does lever pressure appear.<sup>71</sup>

<sup>60</sup> Personal communication J. Pelegrin 2010; Sirakov 2002, 218.

<sup>61</sup> They are also common in the Chalcolithic and Early Bronze Age in Anatolia (Herling 2007, 177–179).

<sup>62</sup> Manolakakis 2005.

<sup>63</sup> Sirakov 2002; Manolakakis 2005; Hansen et al. 2007, 59–69.

<sup>64</sup> Especially from the museums of Giurgiu and Oltenița with finds from Sultana, Căscioarele and Gumelnița, as well as the Ruse museum.

<sup>65</sup> ‘Superblades’ occur in Azmak only in the uppermost levels. In levels of the early Eneolithic, blades were ‘only’ up to 15cm long (Manolakakis 2005, pls. 67–78); Kalchev 2005, 13.

<sup>66</sup> Gatsov – Nedelcheva, in print; Hansen et al. 2006, fig. 22; Gatsov, Nedelcheva in Hansen et al. 2007, figs. 48–54.

<sup>67</sup> Hansen et al. 2008, fig. 56; Klimscha 2011, figs. 13–15.

<sup>68</sup> Benecke et al. 2013.

<sup>69</sup> Nachev in Hansen et al. 2012, fig. 46. From these sources derived also the ‘superblades’ from Durankulak: In the Late Eneolithic more than 80% of the artefacts from Durankulak were made of flint from Radingrad (Sirakov 2002, 215, 217), pointing to a very high specialisation in production.

<sup>70</sup> Hansen et al. 2007, 67.

<sup>71</sup> Sirakov 2002, 220–221.

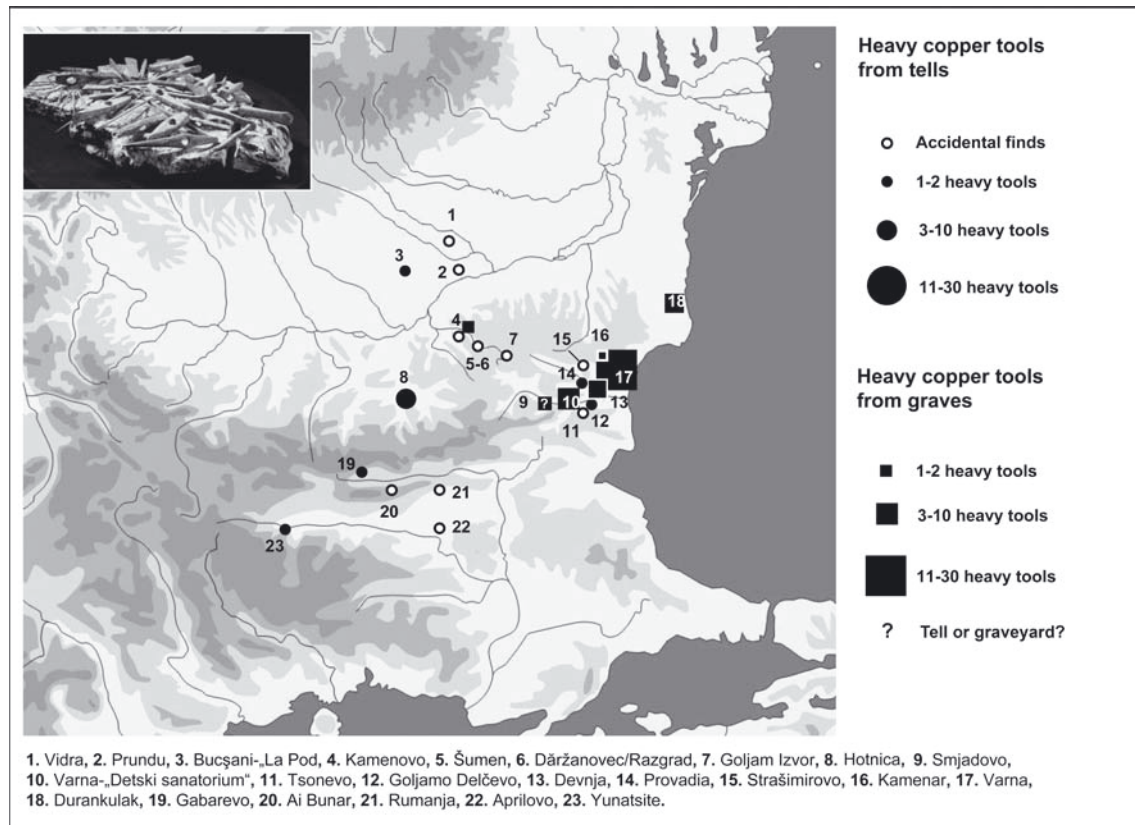


Fig. 9 Distribution of heavy copper tools (photo of tools from Varna: K. Dimitrov).

## Copper

Social transformations in Copper Age communities can be related to the appearance of metals in this area<sup>72</sup> – both heavy copper tools and gold ornaments are abundant in some of the Varna graves but not in coeval settlements. Indeed, all the Eneolithic sites display a certain inventory of small copper objects, single pieces weighing less than 90g. They appear mainly in the layers postdating the 4,600 calBC threshold, as in Pietrele,<sup>73</sup> Căscioarele, Sultana, Hârșova, Bucșani and others.

Heavy copper tools<sup>74</sup> on the other hand, weighing more than 300g, have a good stratigraphic context only in exceptional cases and rarely are comprehensively published. Apart from those found in graves, these artefacts were reported as single objects and stray finds.<sup>75</sup> No heavy copper tools were found in any of the tells otherwise abundant with flint axes, no heavy copper finds are reported from a Gumelnița A context, and none were found in the tells close to the Danube River. Presumably such finds are not expected there, since the few hints to their chronological classification point to the phase Gumelnița B (Bucșani-‘La Pod’)<sup>76</sup>. A mould for casting copper chisels from Căscioarele also dates to this phase.<sup>77</sup> Furthermore, the axe from Vidra is believed to

<sup>72</sup> Hansen 2011, 275.

<sup>73</sup> Toderăș in Hansen et al. 2009, 56–60; Toderăș in Hansen et al. 2011, 95–99.

<sup>74</sup> Hansen 2009, 141–160.

<sup>75</sup> Compare catalogue in Ștefan 2008, 79–88.

<sup>76</sup> Bem 2002, 67.

<sup>77</sup> Vulpe 1975, 57, pl. 33.259–260.

be associated with Gumelnița B, although it was not found in the regular excavation.<sup>78</sup> The hammer axe from Prundu is an isolated find (Fig. 9).<sup>79</sup>

The exact stratigraphic position of the Gumelnița B period is a matter of debate. For example, at the site of Pietrele this phase represents rather a pottery variant occurring in the phase Gumelnița A2 and not a separate stratigraphical and chronological unit.<sup>80</sup> In the archaeological literature, this phase is dated either to the early or sometimes to the middle of the 4<sup>th</sup> millennium,<sup>81</sup> centuries after the KGK VI complex ended.<sup>82</sup>

South of the Danube, well stratified examples of heavy copper tools are likewise rare. Apart from single objects found in the upper levels in Hotnica<sup>83</sup> and in level XVII in Goljamo Delčevo,<sup>84</sup> most were fortuitous finds.<sup>85</sup> In the cemetery of Varna 28 heavy tools of different varieties, mostly hammer axes, were found mainly in cenotaphs and presumably male graves. Their exact chronological position has not been clarified yet.<sup>86</sup>

Among the 200 copper objects in Durankulak are seven heavy tools, notably two hammer axes deriving from male graves of the final stage of the Varna Culture.<sup>87</sup> According to K. Dimitrov's analysis the metal came from two sources: from the Rosen/Medni Rid near Burgas and Ai Bunar in the upper Tundža region.<sup>88</sup>

Heavy tools south of the Balkan Mountains are even fewer and often derive from chance discovery and unclear find circumstances.<sup>89</sup> Even the hammer axes from the mine in Ai Bunar<sup>90</sup> were presented by H. Todorova as 'erworben bei Bergbauarbeiten'.<sup>91</sup> Although a major part of the metals found in the lower Danube region derive from the mines in Ai Bunar,<sup>92</sup> no stratified axes were reported from the tells in Azmak or Karanovo. Only in Yunatsite is the context of two axes of the Pločnik type known. They were found in a house associated with the final habitation phase.<sup>93</sup> The exact chronological position of hammer axes is, therefore, poorly understood, but at least the Vidra type of axes appears to date to the very end of the Gumelnița and Varna cultures, around 4300 calBC or even to the unexplored centuries afterwards.

Traces of metal workshops in the west Pontic area are absent. For the time being, we have to assume that small metal artefacts were brought to the sites both as tools (hooks, awls, chisels) and as valuable items (adornments). The lack of heavy copper tools in the tells may be due to their re-melting, or their retrieval from the ruins of often burnt houses before the construction of a new house on top. Perhaps such items were just about to appear in the region, but the tells were aban-

<sup>78</sup> Vulpe 1975, 22, pl. 2.22.

<sup>79</sup> Vulpe 1975, 22, pl. 2.23.

<sup>80</sup> Reingruber – Rassamakin, in print.

<sup>81</sup> Ștefan 2008; Bréhard – Bălășescu 2012.

<sup>82</sup> Weninger et al. 2010; Reingruber, in print.

<sup>83</sup> One of the three axes was found next to the skeletal remains of a male in the burnt upper horizon (Todorova 1981, 37, pls. 7.104; 8.125, 129).

<sup>84</sup> Todorova 1981, 37, pl. 6/103.

<sup>85</sup> Todorova 1981, 37–38, pls. 6–10; Ștefan 2008.

<sup>86</sup> The <sup>14</sup>C-dates on human bones antedate by 200–300 years those dates obtained from the same graves on animal bones (Higham et al. 2007); therefore, the high BP-values deriving from human bones might be caused by the reservoir effect.

<sup>87</sup> Dimitrov 2002, 146.

<sup>88</sup> Dimitrov 2002, 146, maps 5–6.

<sup>89</sup> Todorova 1981.

<sup>90</sup> Chernykh 1988, 145–150, figs. 85, 217, cat. no. 42: 'probably' found in 1934–1935.

<sup>91</sup> Todorova 1981, 36 (translation: 'acquired during mining works').

<sup>92</sup> Pernicka – Anthony 2010, 170–171.

<sup>93</sup> Manzanova 2011, 15, fig. 4. Lead-isotope studies would clarify if they do indeed belong to the older heavy copper tools of the Vinča Culture made of central Balkan ores. Nonetheless, these tools belong to the oldest stratified heavy tools in Thrace. It should be mentioned that the ceramic inventory of Yunatsite also displays strong affiliations to the central Balkans.

done before they became more widely distributed. The oldest objects from the graves in Varna and Durankulak are certainly much younger than the heavy tools from the Central Balkans.<sup>94</sup>

Ore sources for the metal objects in Pietrele occur at Majdanpek, Čelopeč, Burgas-Strandza and Ai Bunar.<sup>95</sup> The whole upper Tundža region seems to have profited from the latter deposits and probable production centres.

### Gold

The oldest known gold ornaments, like ring pendants, beads and discs, were found in the cemetery of Durankulak dating to the period Hamangia IV,<sup>96</sup> in the cemetery of Varna II from the same period,<sup>97</sup> and in Glina near Bucharest in the levels of the Late Neolithic Boian Culture.<sup>98</sup> Nevertheless, most of the gold objects derive from cemeteries of the KGK VI-complex (Fig. 10); north of the Danube four graves in Vărăști contained gold objects, among them a ring pendant, a cylindrical and three round beads.<sup>99</sup> The cemetery of Chirnogi yielded five beads made from a thin gold sheet.<sup>100</sup> South of the Danube, grave 3 in the cemetery of Varna II contained 31 gold beads.<sup>101</sup> A total of 34 golden rings was found in a heavily disturbed grave in Reka Devnja.<sup>102</sup> Of the three ring pendants found in Sava, one is said to be from a grave.<sup>103</sup> Although in Durankulak 142 pieces weighing 50.5g were recovered,<sup>104</sup> the amount of gold found in the Varna necropolis is breath taking. Approximately 3000 pieces found there weigh a total of c. 6kg. Some ornaments do not show traces of usage, suggesting these pieces were produced especially as grave goods.<sup>105</sup>

Comparatively few gold objects have been found in tell-settlements. Single pieces or small groups of gold objects were found in some of the high tells along the Danube, e.g. Pietrele,<sup>106</sup> Căscioarele,<sup>107</sup> Gumelnița,<sup>108</sup> and in Sultana-Malu Roșu.<sup>109</sup> Farther away from the Danube, however, golden objects are fewer. To the north single ring pendants appear in Vitănești<sup>110</sup> and Vidra,<sup>111</sup> while to the south a variety of ornaments were reported from Hotnica,<sup>112</sup> Ruse,<sup>113</sup> Bereketska Mogila,<sup>114</sup> Drama,<sup>115</sup> Goljamo Delčevo<sup>116</sup> and Yunatsite.<sup>117</sup> A small gold bead was recovered in Sitagroii III.<sup>118</sup> Besides the ring pendants, which perhaps depict the human body, two anthropo-

<sup>94</sup> Borić 2009, 191–245; Pernicka – Anthony 2010.

<sup>95</sup> Hansen et al. 2008, 71.

<sup>96</sup> Dimitrov 2002, 147.

<sup>97</sup> Todorova – Vajsov 2001, 13.

<sup>98</sup> Comșa 1974a, 87.

<sup>99</sup> Comșa 1974b, 184.

<sup>100</sup> Cojocaru – Șerbănescu 2002, 85–86, fig. 2a–e.

<sup>101</sup> Fol – Lichardus 1988, 219–222.

<sup>102</sup> Fol – Lichardus 1988, fig. 55.

<sup>103</sup> Todorova – Vajsov 2001, 67–68.

<sup>104</sup> Dimitrov 2002, 147.

<sup>105</sup> Hartmann 1982, 39–40.

<sup>106</sup> Reingruber 2007, fig. 15; Hansen et al. 2010, fig. 23.

<sup>107</sup> Exhibition in the National Museum of Bucharest.

<sup>108</sup> Dumitrescu 1961, 79, fig. 7. A ring pendant, a ring and a gold ingot weighing 22g were found in different excavation campaigns.

<sup>109</sup> Hălcescu 1995, 11–18; Șerbănescu s.a., 15. Eleven gold pieces weighing 36.170g were recovered from oven debris.

<sup>110</sup> Andreescu et al. 2009, 78, pl. 12.

<sup>111</sup> Rosetti 1938, 38, pl. 21.2; Comșa 1974b, 15.

<sup>112</sup> Todorova – Vajsov 2001, 45, 67–68.

<sup>113</sup> Černakhov 2009, 73, cat. nos. 88–90.

<sup>114</sup> Kalchev 2005, 56.

<sup>115</sup> Personal communication P. Nedelcheva 2012.

<sup>116</sup> Todorova 1982, 104.

<sup>117</sup> Mazanova 2004, figs. 4–5; Manzanova 2011, 15.

<sup>118</sup> Renfrew – Slater 2003, 319–320, fig. 8.1e.

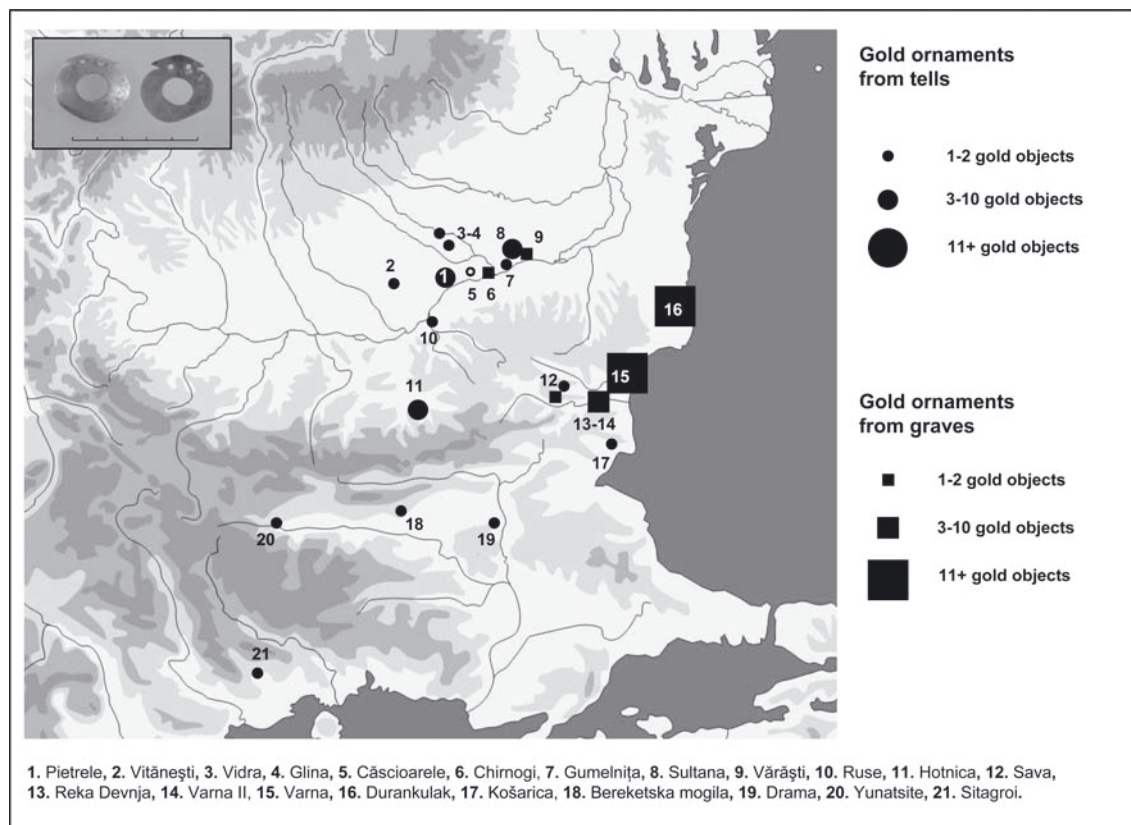


Fig. 10 Distribution of gold objects (photo of a ring pendant from Pietrele: S. Hansen).

morphic figurines have been reported from Ruse and Košarica. Both figurines are now lost. The example from Ruse was probably found together with human bones;<sup>119</sup> the one from Košarica was a stray find.<sup>120</sup>

The sources of placer gold are impossible to establish;<sup>121</sup> their provenance is given as ‘alluvial’.<sup>122</sup> A. Hartmann suspects the origin of the variant containing platinum in Anatolia or the Caucasus.<sup>123</sup> R. Krauß suggests that the rivers flowing from the Balkan Mountains were rich in placer gold.<sup>124</sup> If the gold was indeed panned in the Kamčija and Provadia rivers, its excessive use in the cemeteries of Varna and Durankulak would have been the result of its availability close to the Black Sea coast; the few pieces found farther away could have been procured through trade there.

In addition to ordinary products made of clay, bone and stone, the wealth of the tells is constituted by: 1. Commodities exchanged on an interregional scale needed by specialists for specific tasks, e.g. small copper tools, graphite bars, salt and high quality flint; 2. Valuables such as ornaments made of *Spondylus* and copper, available to a larger part of the community, but not to everyone. Perhaps specialists had easier access to such items. Prestige goods like gold and heavy copper tools interpreted as insignias of power, influence and dominance are rarely encountered in

<sup>119</sup> Comşa 1974b, 184.

<sup>120</sup> Whereas Comşa 1974b, 185 identifies it as deriving from Košarica, Todorova – Vajsov 2001, 89 place it in the tell Kašlădere near Anchialo.

<sup>121</sup> Dimitrov 2002, 147–148.

<sup>122</sup> Bugoi et al. 2003, 375–383.

<sup>123</sup> Hartmann 1982, 37–43.

<sup>124</sup> Krauß 2008, 134.



tells. As a whole, the northern Danubian sites are rich in small metal finds but not in heavy tools. Pending the final publication of the Varna necropolis, which will clarify the relative and absolute chronology of the heavy copper tools, for the moment the evidence rather points to a very late appearance of heavy copper tools of the Vidra type in the region, much later than the appearance of Pločnik type axes in the Vinča Culture.<sup>125</sup>

### Specialisation and Accumulation of Prestige

In the last decade, long-term projects with interdisciplinary methodologies, for example in Pietrele, established a differentiated picture of the Eneolithic society. Evidence for labour division and specialisation in certain crafts appear in the houses in the northern and southern rows on the tell Măgura Gorgana in Pietrele, yet prestigious objects were evenly distributed. Perhaps, not only certain individuals profited from the resources of the regions, but the wealth was shared at least among the inhabitants of the tell. Besides gold and heavy copper objects, ornaments made of *Spondylus* are also accepted by most archaeologists as prestige markers since this raw material is obtained from presumably very distant sources in the Aegean.<sup>126</sup> Initially, the logic of this argumentation whereby artefacts gain in prestige the further away their sources seemed to correlate with the exchange patterns observed for the 5<sup>th</sup> millennium BC. It is possible that items were produced as commodities in one region, and were ‘transformed’ into prestige goods in the neighbouring one. This might be the case with the ‘superblades’, perhaps also the flint axes. However, the latter objects show that unilinear interpretations do not cover the range of complexity of the situation. For example, if flint axes were indeed a status symbol used to express ‘social significance’,<sup>127</sup> their absence in all three cemeteries near the coast, in Varna, Durankulak and Kozareva, is puzzling. Superblades, on the other hand, were found in 25 of the 307 Varna graves, often in very rich male graves (e.g. Grave 43), interpreted accordingly as interments of social leaders. In Durankulak, on the other hand, two of three ‘superblades’ were found in female graves.<sup>128</sup> In addition to the cenotaphs, several male interments in Varna were lavishly furnished with prestige items and even with objects suggesting authority, as for example the stone sceptre on the shoulders of the interred in Grave 43.

A building with outstanding characteristics corresponding to one of the extraordinary graves in Varna continues to elude the archaeological record. The self-expression and imagery displayed in the graves stand in clear contrast to the situation in the tells. The question arises as to whether all of the objects placed next to the individual in Grave 43 indeed belonged to him in life. Were they his own possessions that were buried together with him? Or did these objects belong to members of the community, and were used to commemorate him, regardless if he used to be the leader of the group or rather a specialist in metal production or another member of esteem in the community. The highly diversified objects in some of the graves are difficult to explain as a repetitive funerary set; they could be seen as an accumulation to which several persons added their share. It is not unlikely that social competition enhanced by social pressure was the motivation for such depositions.<sup>129</sup> In this way, the balance between the members of the community might have been regulated, also explaining the cenotaphs as deposits controlling the disparities in the

<sup>125</sup> Borić 2009, 191–245; Radivojević et al. 2010, 2775–2787.

<sup>126</sup> Renfrew – Shackleton 1979, 183–189; Müller 1997, 91–106; contra Todorova – Vajsov 2001, 14–17; Todorova 2002a, 182; Haimovici 2008.

<sup>127</sup> Klirmscha 2011, 263.

<sup>128</sup> Sirakov 2002, 246, fig. 16.

<sup>129</sup> See Hansen 2009, 286 for the implications of ostensibly optional, but nevertheless socially controlled gifts.

society.<sup>130</sup> Such an interpretation contradicts the model of an urban society with institutionalised political power structures. Therefore, judging by the situations reported for tell-settlements, Copper Age authorities were not institutionalised. Moreover, buildings with outstanding construction elements that mark them as special buildings in the settlements are absent. Also, in Pietrele there are no accumulations of copper or *Spondylus* objects in a specific building,<sup>131</sup> even figurines were distributed evenly.<sup>132</sup>

Power, therefore, might not only be measured in the accumulation of prestige goods in the houses but by the accumulation of knowledge and skills acquired. However, insiders' knowledge was not shared by everyone in the community. With their increasing indispensability, specialists might have become society leaders. Power at this stage appears to be person-related, not institutional; neither a central nor a hereditary authority can be demonstrated as of yet. Such a system is dependent upon the succession of leaders. In a short-term perspective, this form of leadership is stable for a few decades but not in an intermediate, let alone a long-term perspective.

Craft specialisation is certainly the catalyst for the processes of not only improving and optimising old techniques but also inventing new ones as was the case in the west Pontic area during the Copper Age. Specialists were presumably of high rank, and perhaps the driving force of the communities. However, not only single persons participated in the exchange of goods and prestige items. Whole regions appear to specialise in the extraction, production, exchange of raw materials specific for a particular region; for example, the coastal area produced salt, the Danube region procured flint, and the upper Tundža area extracted copper. Each region also profited from these activities. Yet, it was only the exchange of the end products among the different regions that led to the cultural florescence of the entire region. Therefore, the wealth of the tells cannot be explained by the organisational and management talents of independent persons but as the result of communication and ceaseless exchange between regions trading their minerals and possibly also their biological and natural resources.

We do not have enough consistent information to interpret the structure of the society in the 5<sup>th</sup> millennium BC, but the few glimpses gained thus far allow a better comprehension of the high level of complexity that distinguished these societies. Nevertheless, systems lacking complex administrative organisation, political alliances, and writing were even more vulnerable to changing conditions provoked by different factors: Not only cultural or social transformations but also changes in hydrology and climate should be considered as the cause for the deteriorations at the end of the 5<sup>th</sup> millennium BC.

### Conclusions

Our knowledge about the organisation of Copper Age communities living on tells has increased considerably during the last decade. Whereas previously we pondered about sophisticated site-plans such as those from Poljanitsa, where c. 60 people lived per settlement phase, today such plans must be widened to incorporate the immediate surroundings of the tell. This has been shown to be a fruitful approach, for example in Pietrele where new methods of investigations were applied; it appears that the tell itself is merely part of a much more complex settlement system. Excavations at Pietrele have further shown that specialised tasks were carried out in specific areas. From Provadia we learn that a whole community was specialised in the extraction and distribu-

<sup>130</sup> Chapman (2010, 79) envisaged Varna as an inter-regional cemetery with interments from 'communities across the western Black Sea region, if not from the whole of eastern Bulgaria and perhaps even farther afield'. The final publication of the cemetery by V. Slavchev will certainly contribute to the understanding of the complex social system of the 5<sup>th</sup> millennium BC, especially after clarifying the incomplete and sometimes contradictory descriptions of the grave goods.

<sup>131</sup> Hansen et al. 2009, 56–60; Hansen et al. 2011, 95–113.

<sup>132</sup> Hansen et al. 2012.

tion of a locally available commodity (salt), optimising old and inventing new techniques. New technologies might have been implemented first in areas where resources were readily available, but their exploitation was demanding, which provoked the development of new solutions. These encompass the manufacture of specific flint axes or ‘superblades’ around the Luda Gora plateau, the extraction of copper from the Balkan Mountains and the production of gold objects near the Black Sea coast.

The implementation of such specialised crafts most likely led to the growing need for an inventive and creative workforce, not only able to organise, but also to explore, transform, design and distribute materials for both daily (flint) and/or for specific use (metals). The rise of such specialists’ social prestige might be reflected in some of the richly furnished graves of Varna and Durankulak. Yet, not a single house on contemporary sites can be securely assigned to a high-ranking person. In Pietrele, for example, the objects made of copper or *Spondylus*, classifiable as prestige goods, are spread evenly across the buildings, at least those on the mound itself. It seems that not only the specialists, but also the broader community benefited from the resources exploited in their region and from the exchange with their neighbours.

Nonetheless, the richness of the graves and the wealth of the tells does not automatically indicate an emerging urban society. Arguments proposed until now do not suffice for classifying the tell-sites as urban or pre-urban centres. Although there are differences in the size of tells, the height of the accumulated layers, the number of habitation levels and the duration of their use, the relationships between sites remains largely unknown and their interpretation a question for future research. Qualitative comparisons alone will not aid in elucidating this problem and data for large-scale quantitative analyses are lacking. Therefore, it is impossible to assess whether a hierarchy of settlements, with one settlement dominating neighbouring ones, existed. We do not know whether flat sites were subordinate to multilayer sites or – vice-versa – whether tells were dependent upon products delivered by potential satellite sites.

No ranking of sites can yet be established for the 5<sup>th</sup> millennium BC in the lower Danube region, and no one urban centre that held exclusive control over an entire region and its resources can yet be identified. Nevertheless, well organised rural societies are reflected in complex settlement lay-outs with activity areas for specialised crafts. Specialists might have been the driving force of the communities, with both their charisma and their knowledge contributing to their social prestige.

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