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## OLD IRON – IRON FISTS AND OTHER FINDS FROM THE MEDIEVAL CASTLE OF CUCAGNA

Abstract:

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Present contribution introduces metal finds and especially components of armaments of the high-medieval castle Cucagna in north east Italy. It should make the material accessible to all prospective customers and invite to a furthermore treatment. With the help of the material it is tried with archaeological and historical sources as well as art-historical comparisons to limit elbowrooms in the date and to compile a contribution to the development of the plate armour for body defences. At the same time the opened information can be checked with the help of the archaeological features or applied to this.

Key words: stiff hourglass gauntlet, Cucagna, medieval, metal finds, armoured protection

### Introduction

Among numerous finds from the excavations of the Institut für Archäologische Wissenschaften Freiburg<sup>1</sup> and the Istituto per la Ricostruzione del Castello di Chucco-Zucco<sup>2</sup> at the Castle of Cucagna, some extraordinary finds and information available for the fortification complex have already been presented<sup>3</sup>. The examinations focused on the fortifications of the castle (which are testified to since 1027), directly above the Commune of Faedis<sup>4</sup>. It was founded by a family of Swabian origin<sup>5</sup> and it possibly originated from a forest clearing castle (German: *Rodungsburg*)<sup>6</sup>. Partially,

the finds from the excavations which were carried out in the run-up to an extensive redevelopment work belong to complete inventories, as it may have been the case after the demolition and abandonment of a castle (or parts of it) and the completed conservation of the remaining material substance in the soil. This may also be true for two iron hand protectors, which are discussed again in this paper with their context<sup>7</sup>. They are supplemented with cultural-historical parallels, an extended review of preserved comparable specimens – archaeological finds<sup>8</sup> and original objects in collections – and a view on other metal finds from

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<sup>1</sup> Department of Early Historical Archaeology and Archaeology of the Middle Ages, with permission of the Soprintendenza ai Beni Archeologici del Friuli-Venezia Giulia. Started in 2001, with a connection to the Faculty of Pre-and Early History (closed down in the meantime) of the Humboldt-Universität in Berlin, since 2007 to the IAW; excavation director – the author of the present paper (for the state of excavations cf. Grönwald 2009, 190-198; 2010, 65-77; 2011, 161-206).

<sup>2</sup> Stremiz di Faedis (Udine), under the direction of Roberto Raccanello and Katharina von Stietencron, member of the Consorzio per la Salvaguardia dei Castelli Storici del Friuli-Venezia Giulia.

<sup>3</sup> For this issue cf. e.g. the plan of building phases see work of Grönwald (2009, 191); updated review of previous excavation areas (Grönwald 2011, 200, Fig. 21); further publications are forthcoming.

<sup>4</sup> To which the Castles of Rodingerio/Rodingen, Zucco and Soffumbergo also belong.

<sup>5</sup> Unfree ministeriales from the family of the later Auersberger (Ursberg, Swabia) advance to the lower nobility due to the possession of the castle – and on this occasion, they claim to originate from the high nobility. In 1275 they were granted with the right of ownership and jurisdiction in Faedis (cf. Degani 1895, 105-109, 122-125, 137-142, 154-158; Ludwig 2009, 144 f).

<sup>6</sup> On Rodingerio/Rodingen, the premise which gave the name for the entire mountain ridge above Cucagna, and a similar case in Friuli (Prampero/Prantperg) (cf. Grönwald 2010, 68, footnote 55).

<sup>7</sup> First find reports: *Messaggero Veneto*, 28.11.2006; *FastiOnline*, Castello di Cucagna 2006 ([http://www.fastionline.org/micro\\_view.php?fst\\_cd=AIAC\\_145&curcol=sea\\_cd-AIAC\\_922](http://www.fastionline.org/micro_view.php?fst_cd=AIAC_145&curcol=sea_cd-AIAC_922); [http://www.ufg.uni-freiburg.de/d/inst/lehre/Cucagna\\_4.htm](http://www.ufg.uni-freiburg.de/d/inst/lehre/Cucagna_4.htm)); see also works of Grönwald (2007, 10; 2010 72, Fig. 14; 2011). The use of a reconstruction drawing by the author (Ahumada Silva 2006, 358), occurred without notifying him of it and without addressing the contextual relations of the finds.

<sup>8</sup> In this place, I thank the editors of the *Acta Militaria Mediaevalia* journal, and especially Mr Arkadiusz Michalak, for suggestions concerning further finds and support in overcoming research barriers in finding Polish publications.



Fig. 1. Castello di Cucagna, Faedis, Italy. Gauntlet (Germ. *Hentze*) from the Palazzo III A, No. 2006/395. State before the conservation. Photo by H. Grönwald.

Ryc. 1. Castello di Cucagna, gm. Faedis, Włochy. Rękawica (niem. *Hentze*) odkryta w Pałacu III A, nr inw. 2006/395. Zabytek przed konserwacją. Fot. H. Grönwald.



Fig. 2. Castello di Cucagna, Faedis, Italy. Gauntlet (Germ. *Hentze*) from the Palazzo III A, No. 2006/395. State after the conservation. Photo by H. Grönwald.

Ryc. 2. Castello di Cucagna, gm. Faedis, Włochy. Rękawica (niem. *Hentze*) odkryta w Pałacu III A, nr inw. 2006/395. Zabytek po konserwacji. Fot. H. Grönwald.

Cucagna<sup>9</sup>, which are still to be analysed in detail. Additional information in the Appendix is to draw attention to particular technical data and steps that were necessary for the conservation of finds.

The primarily discussed hand defences with cuffs, worn on leather or textile (finger) gloves<sup>10</sup> and provided with padding of such material, were referred to as hourglass gauntlets or *Hentzen*<sup>11</sup>.

<sup>9</sup> In order to keep the references to the original presentation (cf. Grönwald 2011, 162-193, Figs. Abb. 12-13), it was decided to preserve the numbering of individual finds and art historical comparative specimens which was applied there. Here, additionally considered comparative specimens were given a consecutive numbering, which can be found both in the text and on Figs. 13 and 18.

<sup>10</sup> Variants with mittens first develop after ca. 1410.

<sup>11</sup> According to Laking (1920a;1920b). *Hentze* or *hanczke* = possibly derived from Old High German *hantscuoh*/Handschuh, related to Old and Middle High German *hant* (also power, authority or protection; in a diminutive form *hendelin*) (according to Köbler 1993, 158, 162); in Latin – *chirothecae ferreae* (cf. Marek 2008, 102).

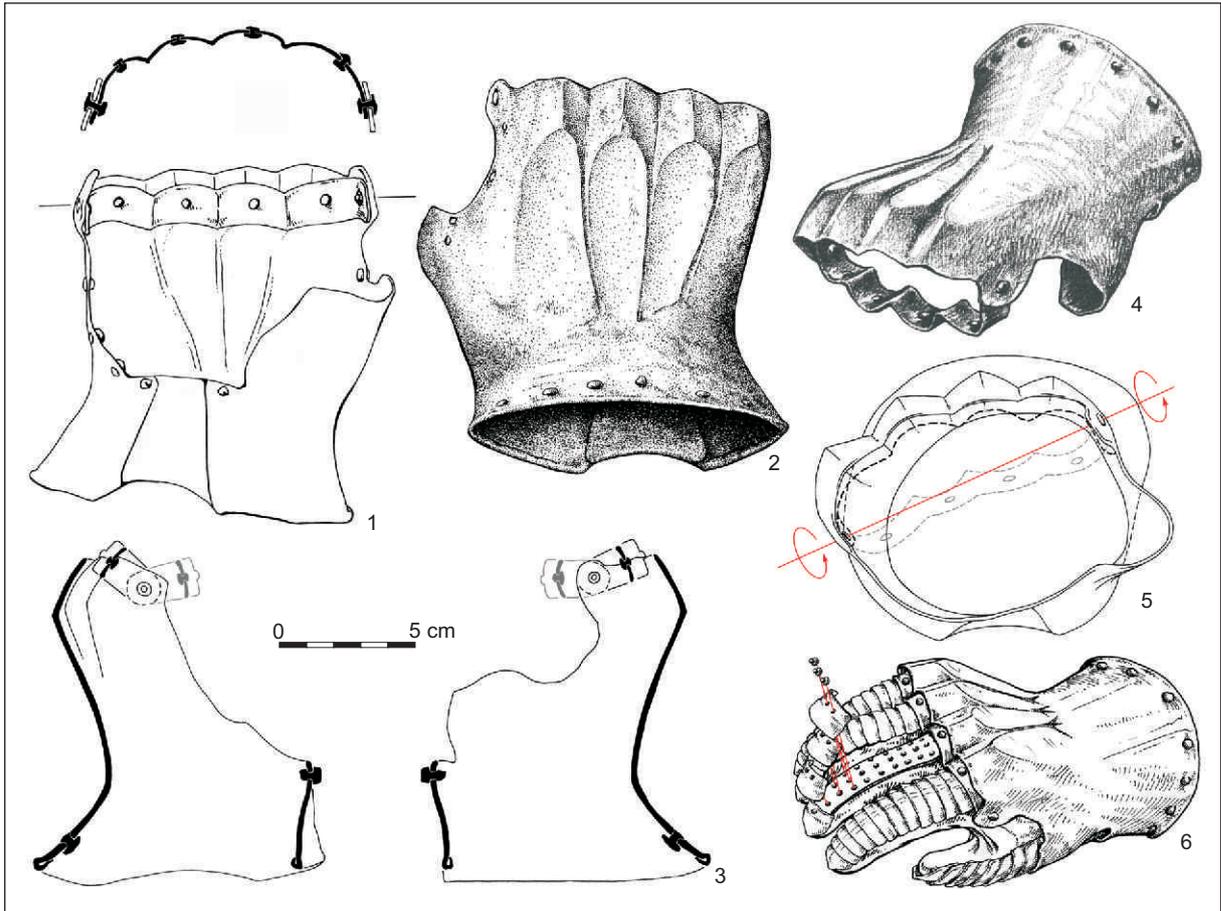


Fig. 3. Castello di Cucagna, Faedis, Italy. Gauntlet founded in Palazzo III A, No. 2006/395: 1-3 – drawings; 4-6 – reconstruction. *Drawing by H. Grönwald.*

Ryc. 3. Castello di Cucagna, gm. Faedis, Włochy. Rękawica odkryta w Pałacu III A, nr inw. 2006/395: 1-3 – rysunki zabytku; 4-6 – rekonstrukcja. *Rys. H. Grönwald.*

This widespread *terminus technicus* has recently been sometimes reduced to iron mittens<sup>12</sup> and the term glove has been used in a generalised way for kinds of defences with separate protection of individual fingers. As the term gauntlet or *Hentze* encompasses the typical defence of the back of the hand and in order to stress the distinction from the glove in the proper sense, which lay below it, this term will be traditionally used and kept here<sup>13</sup>.

Due to possible observations concerning the development of medieval militaria which can be done based on gauntlets and the postulate to

discuss their development in a comprehensive manner (Post 1933, 47), comparable finds were always considered with special care. Furthermore, a broad scope of reproductions came into existence, both in the period of Historicism and also (more intensively) in more recent times, which will not be discussed here<sup>14</sup>.

On the one hand, the significance of hand defences in the development of body defences to the plate armour or the “alwyte armour” is stressed over and again<sup>15</sup> – on this occasion, however, established focal points are to be relativised in

<sup>12</sup> See work of Kühnel (1992, 114) – with an attempt to coin terminologies under his own name, definitely with influence on the recent generations of “armour students” or “Harnischkundlern” (the term he uses for himself).

<sup>13</sup> As already done in the first more extensive publication (cf. Grönwald 2011, 162ff., footnote 6).

<sup>14</sup> Concerning historical replicas, sometimes of such quality that it renders a precise discussion difficult without technological analyses. One can point, e.g., to specimens in the trade of art, as a gauntlet offered via Hermann-Historica München, where further pairs in sets of armour are offered additionally with the stock of the Berlin collection of Karstein Klingbeil. Similar objects may be found with figurines, as, e.g., at the Marksburg near Braubach, Rhein-Lahn distr., Deutschland (first publication in the auction catalogue of the Auction House Rudolf Lepke, May/June 1904: *Waffen- und Kunst-Sammlung...* 1904), or in the collection of the Museo Stibbert in Florence, Italy, Chapter: *Armeria europea* (cf., e.g., Stibbert 2000). Modern reproductions from the Living History field come into existence due to different intentions.

<sup>15</sup> Until recently, by following Nørlund, Thordeman (1931 – cf. reviews by Post 1933, 44) and Thordeman (1939, 244).



Fig. 4. Knightly figure of Bernabò Visconti in Castello Sforzesco (Milano) and details of depicted gauntlets (photo by V. Calore; after Vergani et al 2001, 8, Fig. 41, 47-48).

Ryc. 4. Figura Bernabò Viscontiego w Castello Sforzesco (Mediolan) i detale wyobrażonych rękawic (fot. V. Calore; wg Vergani et al 2001, 8, Fig. 41, 47-48).

such a sense that they consider such hand defences as details. Unfortunately, the discovery and analysis of extraordinarily rich finds fell into the period of concentrated militarisation of

European societies<sup>16</sup>. It was published in an exemplary manner, according to contemporary standards, and the historical environment makes declared interests in weaponry understandable<sup>17</sup>.

<sup>16</sup> E.g., the excavations at Visby between 1905 and 1929 (cf. Thordeman 1939, 232-244; see also review of P. Post 1933, 46). The uniqueness of this material is out of question; however, it cannot be dealt with anymore without the scope and interpretation of extensive comparative data.

<sup>17</sup> E.g., in the proud creation of the Late Gothic knightly armour, which set its seal to the entire epoch in artistic terms (Post 1933, 47) it was stated in a similar way at the opening of the *Castles and Power* exhibition on 24 June 2010 in the Deutsches Historisches Museum in Berlin, which displayed objects that bear proud testimonies (H. Ottomeyer). A question to what extent the images of

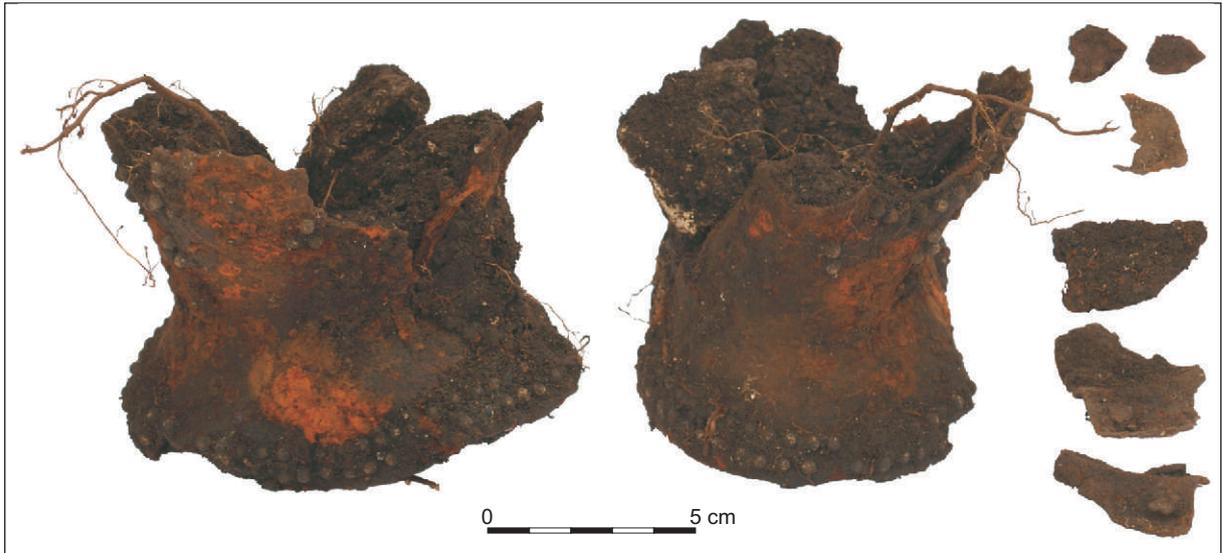


Fig. 5. Castello di Cucagna, Faedis, Italy. Gauntlet from the Palazzo IV B, No. 2008/034. State before the conservation. *Photo by H. Grönwald.*

Ryc. 5. Castello di Cucagna, gm. Faedis, Włochy. Rękawica odkryta w Pałacu IV B, nr inw. 2008/034. Zabytek przed konserwacją. *Fot. H. Grönwald.*



Fig. 6. Castello di Cucagna, Faedis, Italy. Gauntlet from the Palazzo IV B, No. 2008/034. State after the conservation. *Photo by H. Grönwald.*

Ryc. 6. Castello di Cucagna, gm. Faedis, Włochy. Rękawica odkryta w Pałacu IV B, nr inw. 2008/034. Zabytek po konserwacji. *Fot. H. Grönwald.*

which aim at public recognition and administrative support for particular branches of research.

As a matter of fact, it is not the author's intention to once again deal only with elements of equipment of the warrior caste, which, in the historical research on castles, other individuals gave way to for too long. The social upper class at the castles for long dominated in the form of individual

persons the historical literature and the popular image of the Middle Ages – as this class was able to immortalise themselves in written sources. In order to critically assess their truthfulness, quite particular archaeological finds are to be purposefully made use of, even if they are rather irrelevant in statistical terms (about which narratives are often deceitful)<sup>18</sup>. It is therefore

cultural and weaponry-technical dominance of the Western world which were depicted at that occasion become widespread, cannot be discussed here. It should be only pointed to numerous possible comparative examples with regard to product and political advertisement.

<sup>18</sup> On difficulties in dividing between the material culture and the quality of castle excavations cf. Gossler (2009, 25-27).

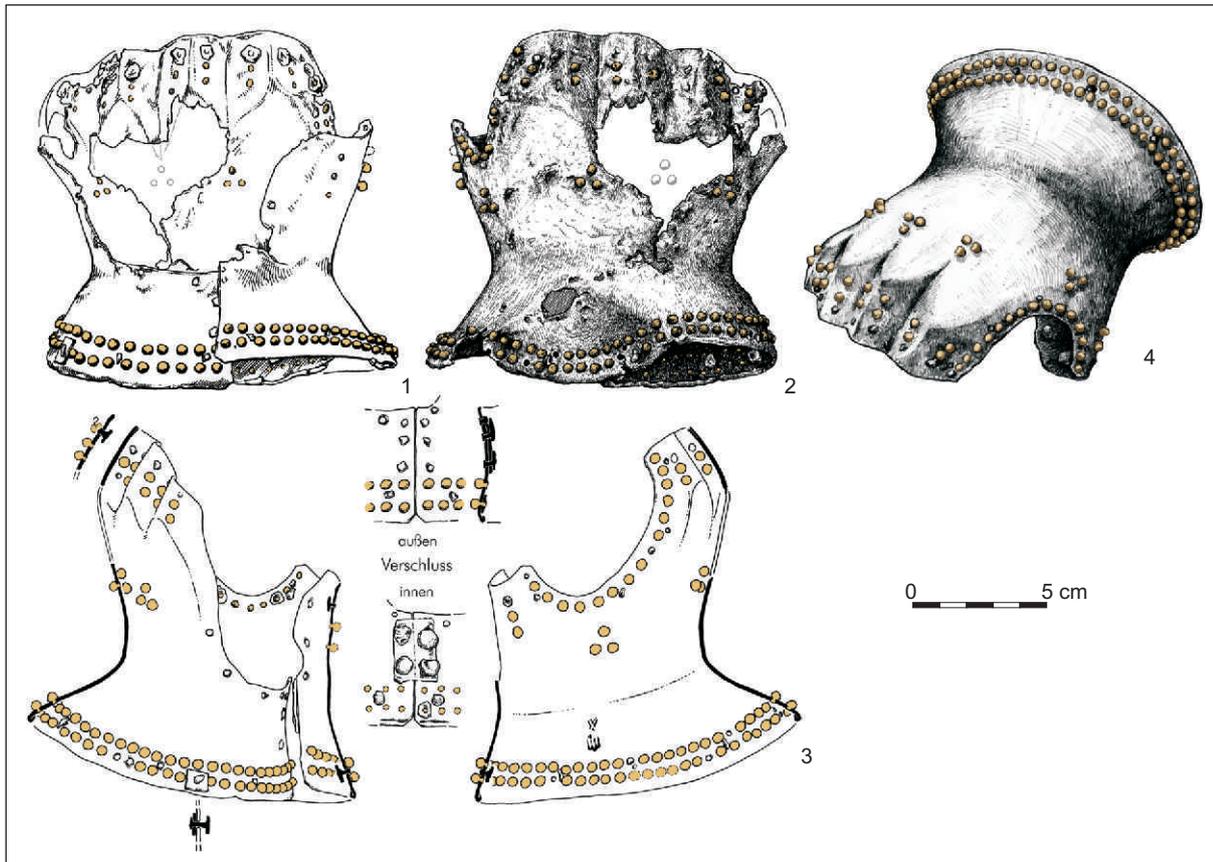


Fig. 7. Castello di Cucagna, Faedis, Italy. Gauntlet from the Palazzo IV B, No. 2006/034: 1-3 – drawings; 4 – reconstruction. Drawing by H. Grönwald.

Ryc. 7. Castello di Cucagna, gm. Faedis, Włochy. Rękawica odkryta w Pałacu IV B, nr inw. 2006/034: 1-3 – rysunki zabytku; 5 – rekonstrukcja. Rys. H. Grönwald.

inevitable that part of inhabitants of the centre of a petty aristocracy's lordship who see themselves as the social elite are in the centre of observation<sup>19</sup>. As the leading class of castle lords or knights, this part is usually difficult to identify, whereas archaeological finds bring extensive data on the cultural-historical image of life of all the inhabitants. In the case of Friuli, one must take into consideration that the burghmannen, the entire personnel and the peasant environment were composed of numerous ethnic groups, after a complex history of settlement. The diversity of the material culture resulted from different sources.

### Two gauntlets or *Hentzen* from Cucagna

Until now, two hourglass hand defences, each made of one plate, were discovered in 2006 and

2008 at Cucagna – whereby at least three items are known from the Commune of Faedis<sup>20</sup>. On the other hand, fragments of armour have occurred over and over among the finds – this issue will be dealt with later on (see below)<sup>21</sup>. In contrast to the equipment of ordinary squires, a far greater sum was spent on protective armour of a personal, knightly body protection, such as, e.g., iron hand defences. This can be precisely demonstrated with written sources for Friuli, based on the equipment and cost lists for the troops of the Patriarch of Aquileia (Cf., e.g., Corbanese 1984). It was conditioned not only by the central combat-tactical role of the knight, but also, among technical-ergonomical ones, by representative and fashion requirements of the time and the feud. Based on especially well-preserved “functional” details of

<sup>19</sup> Most recently for the first time on a broader scale, e.g., also within the framework of the *Castles and Power* exhibition (Deutsches Historisches Museum in Berlin, 25 June – 24 October 2010), which, however, also offered room for a critical reflection (i.a. Biller 2010, 324-333; Meyer 2010, 16-25).

<sup>20</sup> A glove from Soffumbergo is stored in the Museo Archeologico Medioevale di Attimis (Udine, Italy). It is integrated into an armour combination, put together from finds from the castle.

<sup>21</sup> In individual cases during test excavations of building recordings since the late 1980s. The richest collection was revealed in the framework of systematic examinations since 2001, with stratigraphically secured contextual data.

finds from Cucagna, these issues can be discussed in a more detailed way. They offer an opportunity to analyse the use and the life-time of the items based on archaeologically revealed data, to gather comparative material and to discuss the typology of high and late medieval defensive arms. Resulting statements concerning the relative chronology of archaeological finds which are to be classified in a more precise manner serve the scholarly processing, analysis and assessment of the entire range of finds, as focusing on one extraordinary type of finds does not contradict the elementary tasks of the assessment of excavation results. Interrelation of material remains via classification, description, gathering of information and integration of additional sources with historical connections allows for a closer view on the reasons for the association of finds and their protagonists, which is an essential objective of archaeological examinations. Art historical references offer themselves in parallel, in this case especially those concerning representations of such image or monument type as grave- or tombstones, as well as epitaphs. They define the scope of dating in a narrower way – while it must also be taken into consideration that the dates of death related to these monuments cannot always be projected onto the time of origin of the works of art. These may have been ordered earlier or may have originated after the death of the depicted persons, partially also as epitaphs<sup>22</sup>. On the sculptures, there are details depicted with astonishing precision<sup>23</sup>, which are appropriate for almost “technical” comparisons<sup>24</sup>.

The first piece of hand defences from Palazzo III A, or the so-called “palazzo grande”<sup>25</sup> of Cucagna, which was a representative palace building from the 2<sup>nd</sup> quarter of the 14<sup>th</sup> c., could

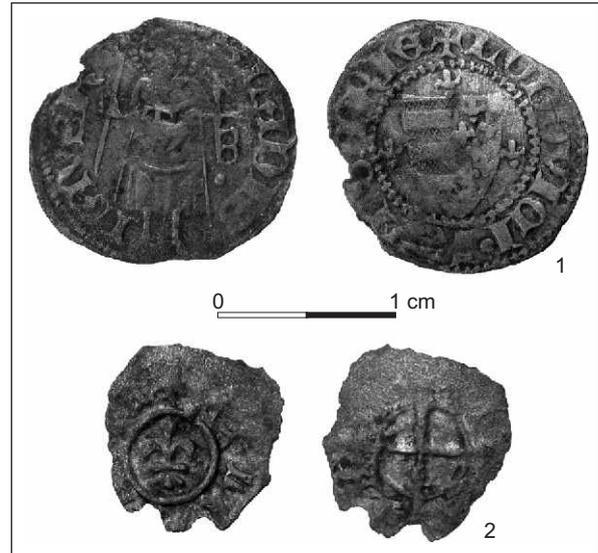


Fig. 8. Castello di Cucagna, Faedis, Italy. Coin finds from the Palazzo IV B: 1 – Luis' I. of Hungary Denarius, No. 2008/25; 2 – Philipp's of Alençon Small (*Piccolo*) Denarius, No. 2008/148. Photo by H. Grönwald.

Ryc. 8. Castello di Cucagna, gm. Faedis, Włochy. Znalaziska monet z Pałacu IV B: 1 – denar Ludwika Węgierskiego, nr inw. 2008/25; 2 – *Piccolo* Filipa z Alençon, nr inw. 2008/148. Fot. H. Grönwald.

be first conserved in a provisional manner after it had been removed en bloc, and then it was thoroughly restored (see below; length 13.5 cm, width 12.0 cm; height 10.5 cm; weight 235.44 g) (Figs. 1-2). It is a relatively simple specimen with a back part divided with grooves (or with arrow or crow's foot-like terminals towards the wrist<sup>26</sup>), as well as a paw-like shape of the distal knuckle part of the metacarpus (No. 1a<sup>27</sup>). The rear edge of the cuff ends with a band, which is folded inside for the sake of strengthening<sup>28</sup>. A bridle or splint, riveted on in a way that enables it to move easily,

<sup>22</sup> Here, only examples of sculptural figures will be considered and their selection can be expanded further (cf. Fig. 13 with numerical references in the text). A particular example showing how long after the death of the depicted person a tombstone could originate is, e.g., the epitaph of Landgrave Ludwig II (the Iron One) of Thuringia († 1172; No. 64) from the castle church of Rheinhardbrunn (now at the Church of St. George, Eisenach). It originated only after the rebuilding of the church after it had been destroyed by fire in 1292, in the 1<sup>st</sup> half of the 14<sup>th</sup> c. It shows examples of gloves with paw-like shape of the back.

<sup>23</sup> Obviously, these can also be found in the field of fresco paintings – one can think of the armed horsemen on the scenery of the *Massacre of the Innocents* (Matthew 2, 16) of the Florentine painter Cenni di Francesco (1369-1415) in St Francis Church in Volterra, Italy (Cappella della Croce di Giorno), or the founder representation of an armoured man in the Dominican church in Bozen, Southern Tirol, Italy. A limitation to basically one type of images was necessary.

<sup>24</sup> By means of lavish monuments, not only the *podestas* of the deceased was to be stressed, but what was also underlined – with regard to St Guglielmo – was the Christian change of life of the person who is depicted in iron garment after the death. Wilhelm or Guilelmus Magnus of Malavalle († 1157; declared saint in 1202) served as a pattern. After stormy chivalrous youth and pilgrimages to the Holy Land, Santiago de Compostella and Rome, he withdrew from the world as a hermit and ordered a mail hauberk and a helmet to be forged onto the his penitential garment. Depictions from the 13<sup>th</sup> c. were transferred onto the tombstones.

<sup>25</sup> Referred to in this way in a charter concerning a division of the castle in 1326 between brothers Varnerus, Henricus and Joannes from 9/10 October 1326 (a copy of the charter from 5 November 1559: Archivio Ettore di Valvasone; Carreri 1907, 170-172).

<sup>26</sup> In the given state of preservation, only their outlines can be identified. These are also bent in a different manner, similarly to the specimens in the Churburg Collection (CH S12/13 (15)), which are also strongly rubbed down.

<sup>27</sup> The numbering refers to, as well as in the following cases, Figs. 12-13.

<sup>28</sup> It is to be considered whether it also additionally contained a leather or otherwise prepared lining of the defence (not of the internal, exchangeable glove itself). Regrettably, remains of organic material did not survive, or the fold could not be opened until now, and for the sake of preservation of the item, it should not be damaged with an operation of this kind.

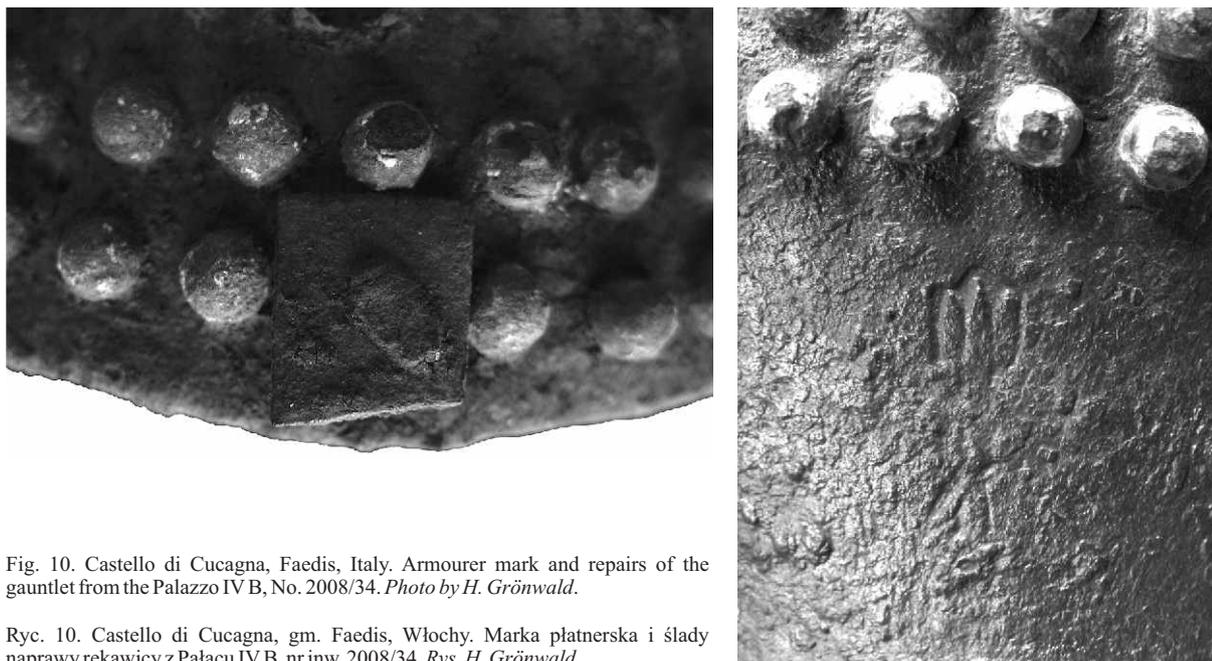


Fig. 10. Castello di Cucagna, Faedis, Italy. Armourer mark and repairs of the gauntlet from the Palazzo IV B, No. 2008/34. Photo by H. Grönwald.

Ryc. 10. Castello di Cucagna, gm. Faedis, Włochy. Marka płatnerska i ślady naprawy rękawicy z Pałacu IV B, nr inw. 2008/34. Rys. H. Grönwald.

whose purpose was to secure the glove, was preserved at the height of the roots of the fingers or the ball. With minimal movability around the rotation axis of rivetings (which were situated in front of one another) with the protection plate, these brigdes principally served for securing leather straps, on which small plates of the finger defences were mounted (cf. Fig. 3). The splints fit closely under the back plate<sup>29</sup> and secured flexibility and movability of fingers, long before the invention of iron “lames” (so called *Geschübe*). Onto these leather straps (which rarely survive), textile or leather internal gloves were fixed<sup>30</sup>, so that when these were changed in case of getting worn out only both rivets of the internal splint

had to be opened and replaced. A comparable phenomenon survived in the case of one of the Tannenberg finds from old excavations led by J. H. von Hefner-Alteneck (No. 19; Fig. 12:C)<sup>31</sup>, an analogous specimen in the Museo Nazionale del Bargello in Florence (No. 12), and partially a glove from the Heinrichenburg<sup>32</sup> (No. 20)<sup>33</sup>. Apart from that, on the side of the pulse there is a firmly forged plate which is riveted to the palm part, which serves to close the cuff on the wrist. This last feature can be testified to more often: in the case of the first hand defences (published in 1850) from the finds from Tannenberg (No. 4; Fig. 14)<sup>34</sup>, an item stored in Nürnberg (No. 8)<sup>35</sup>, and even a later variant from the Schauenburg near Dossenheim (No. 22)<sup>36</sup>. These

<sup>29</sup> In the reconstruction drawing, it is depicted as turned at the angle of 180°, for the sake of visualisation of all the component parts of the gauntlet or *Hentze*.

<sup>30</sup> These survived only in particular and climatically constant storage conditions, e.g., in the case of a pair in Canterbury (the originals are adequate to No. 43 – these are, as a matter of fact, funeral gloves with brass defences of no utilitarian value, which is why they are not discussed in a more detailed way here and they are of utmost interest only due to the internal gloves; cf. footnote 121), as well as pieces from Ripon, North Yorkshire (Great Britain; Nos. 7 and 11) or Ørum (Midtjylland, Denmark; No. 18); cf. footnote 87).

<sup>31</sup> District Darmstadt-Dieburg im Odenwald/Bergstraße; former Seeheim.

<sup>32</sup> Castrop-Rauxel/Westfalen (cf. Peine et al. 1998, 214f., Fig. 14; text to footnote 186; Peine 2004, 40-77).

<sup>33</sup> Also for later finger gloves the same technique was used, cf. the glove from the Augustinermuseum in Freiburg (Inv. No. 973), maintained by the conservator K. Miethe (2008) as well as M. Goll (2009, Fig. 36).

<sup>34</sup> A find from 1849 (cf. Hefner-Alteneck 1850, 25f., 94 to Pl. X, Figs. E-F; as well as Schmitt 2008, 17-19), whose location cannot be identified now. An uncertainty of A. Schmitt, whether two gloves or only one piece was depicted in the publication by Hefner-Alteneck, is clarified by the plate description, referring to the right one (Hefner-Alteneck 1850, 94 to Pl. X). As noted in another place, further research did not take place as part of the work which concentrated on the difficult assessment of an old excavation (cf. Wagner, no date; Küntzel 2009).

<sup>35</sup> Germanisches Nationalmuseum, Inv.-No. W 1018 (cf. Williams 2002, 357 – the quality of the image in Fig. 12, which was based on hitherto publications, could not be replaced with a better alternative, as the Germanisches Nationalmuseum did not process a relevant image request).

<sup>36</sup> Cf. footnote 154.

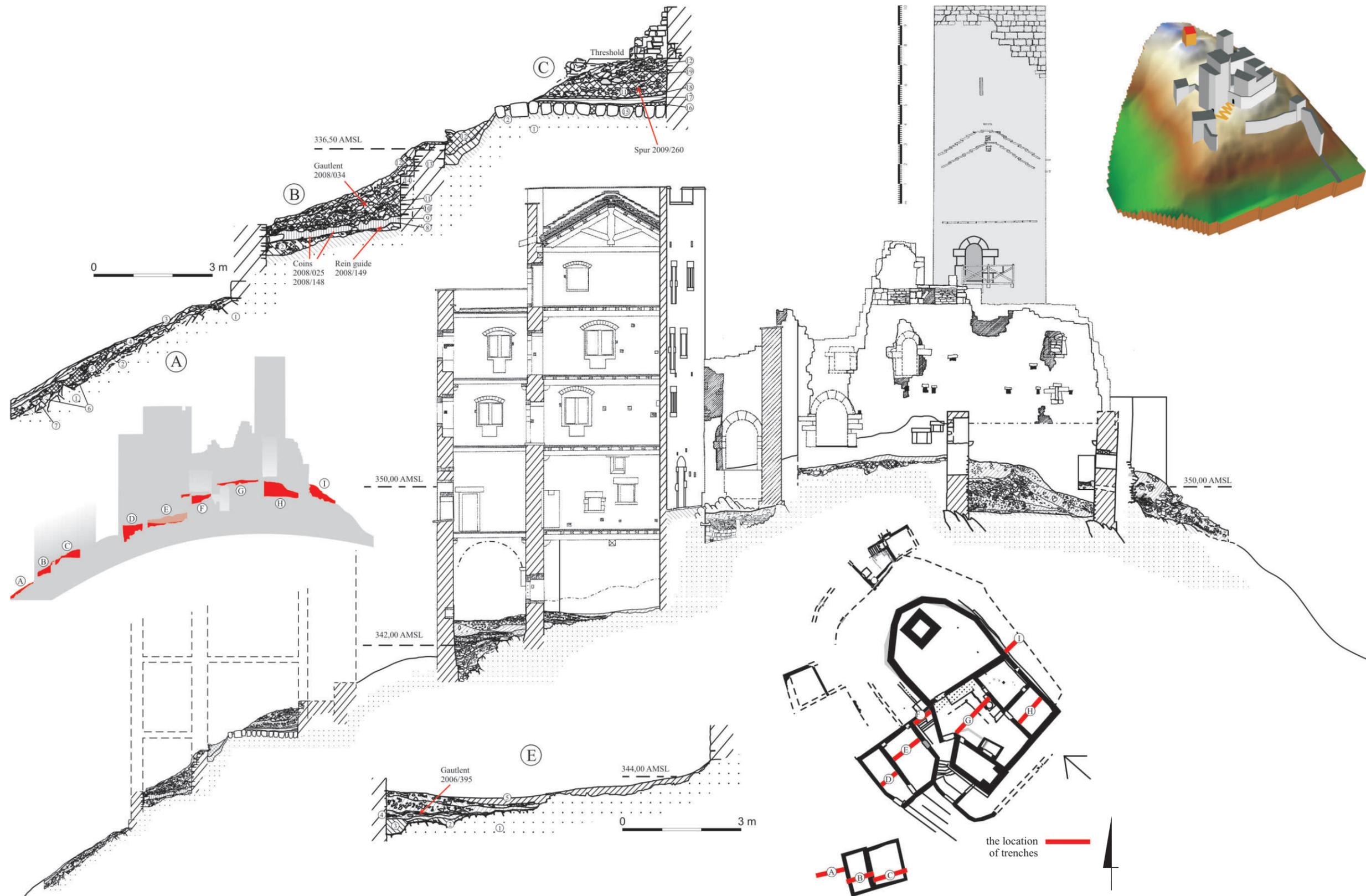


Fig. 9. Castello di Cucagna, Faedis, Italy. Schematic cross-section of a medieval castle based on archaeological research and the profile where location of gautlent found was marked: A – section of the bailey (1160-1186), cut in 2008; B – section of Palazzo IV B (1<sup>st</sup> half of the 14<sup>th</sup> c.), cut in 2008/2009; C – section of Palazzo IV (foundation in 1160-1186, the reconstruction – the end of the 13<sup>th</sup> c.), cut in 2009 (sections 1-3 description: 1 – rock; 2 – clay; 3 – leveling humus layer; 4 – eroded humus; 5 – destroyed wall, mortar layer; 6 – saturated mortar layer; 7 – layer of debris from the base of the wall; 8 – occupation layer (HK); 9 – a layer of crushed brick/horizon of the destruction; 10 – a layer of rubble stone/horizon of the destruction); E – section of Palazzo Grande in the 3<sup>rd</sup> phase of use (the beginning of the 14<sup>th</sup> c.), cut in 2006 (1 – rock; 2 – artificial strata of clay; 3 – pit filled with clay; 4 – fire layer/horizon of the destroy, the 1<sup>st</sup> half of the 16<sup>th</sup> c., 5 – Modern, destruction layer, sand and mortar). Drawing by H. Grönwald.

Ryc. 9. Castello di Cucagna, gm. Faedis, Włochy. Schematyczny przekrój średniowiecznego zamku oparty na badaniach archeologicznych oraz profil z oznaczonym miejscem odkrycia rękawic: A – profil podzamcza (1160-1186), cięcie w 2008 r.; B – profil Palazzo IV B (1. połowa XIV w.), cięcie w 2008/2009 r.; C – profil Palazzo IV (fundacja w l. 1160-1186; odbudowa – koniec XIII w.), cięcie w 2009 r. (opis profili 1-3: 1 – skała; 2 – glina; 3 – warstwa zniwelowanego humusu; 4 – zerodowany humus; 5 – destrukcja muru, warstwa zaprawy; 6 – warstwa nasycona zaprawą; 7 – warstwa gruzu z podstawy ścian; 8 – warstwa użytkowa (HK); 9 – warstwa gruzu ceglanoego/horyzont zniszczenia; 10 – warstwa gruzu kamiennego/horyzont zniszczenia); E – profil Palazzo Grande w trzeciej fazie użytkowania (początek XIV w.), cięcie w 2006 r. (1 – skała; 2 – poziom użytkowy, glina; 3 – wkop wypełniony gliną; 4 – warstwa pożarowa/horyzont zniszczenia, 1. połowa XVI w.; 5 – nowożytna warstwa destrukcyjna, piasek i zaprawa). Ryc. H. Grönwald.





Fig. 11. Probably an older type of gauntlet from a rigid plate (if this isn't a copy). Collection of Metropolitan Museum of Art in New York, No. 29.150.106. Photo by M. Goll; adapted by H. Grönwald.

Ryc. 11. Prawdopodobnie najstarsza (jeśli nie jest to kopia) rękawica wykonana z jednego płata blachy. Zbiory Metropolitan Museum of Art w Nowym Jorku, No. 29.150.106. Fot. M. Goll; oprac. H. Grönwald.

plates and their riveting, which were sometimes enhanced with ornament, can be also found on visual representations. E.g., they are clearly stressed on the tomb of Günther von Schwarzburg in Frankfurt am Main († 1349; No. 24)<sup>37</sup>, or of William Disney at St. Peter's Church in Kingerby († 1360; No. 25) (Figs. 2-4).

The find comes from the fire horizon of the final destruction of Palazzo III A, which can be closely related to the building feature<sup>38</sup>. After removal of the large-sized masonry tumble, in 2006 the internal space was divided into six quadrants and each was exposed in several plans down to the bedrock or the clay levelling of the former floor horizon. Under the rubble horizon of the early modern period earthquake damage a firm fire layer, charred remains of the wooden storey installations

of the roof that collapsed under the rubble and the coatings of floors of the upper storeys were preserved, being concentrated in Quadrants 5 and 6 (find place of the gauntlet or *Hentze*), quasi directly on the clay floor. Furthermore, the western wall of the palace building<sup>39</sup> demonstrates traces of intensive fire impact on its entire height<sup>40</sup>. Despite the irregular surface which fell off slightly across the hillside, hardly any formation of cultural layers could be found under the fire layer. This is clearly an evidence of intensive usage of the "cellar room"<sup>41</sup>, which kept the surface free, until the abandonment of the castle between 1511 and 1522 (cf. Czoernig 1873, 690; Miotti 1967). The relation of the fire horizon to these features is naturally suggested by various evidence, where Cucagna itself is hardly of further significance<sup>42</sup>.

<sup>37</sup> The representation does not offer an exact image in qualitative terms, but it stresses the riveting.

<sup>38</sup> Cf. Figs. 11-12, Section 5 (without the modern period stone rubble).

<sup>39</sup> The former external and later internal division wall to Palazzo III B. For the basement, the bedrock was worked off on the incline vertically down to the depth of 6 m as the palace was built.

<sup>40</sup> Being situated in the centre of the large building (after the extinction that included Palazzo III B), the source of fire and pulling effect of heat were concentrated here. The traces are discernible based on the fallen off stone surfaces, firmer composition of the layer and reddish-brown discolouration of locally acquired lime sandstone, laid in *opus incertum*.

<sup>41</sup> One is to assume wooden installations for subceilings and shelves, based on numerous stone wedgings for post construction; a precise reconstruction, however, has not been possible until now, despite these and holes for fixing the baulks in the rising masonry.

<sup>42</sup> At this time, only the castle of Zucco was mentioned, which was connected to Cucagna with a wall, forming a closed fortification facility (cf. Grönwald 2010, 66, Fig. 4). There were no direct descendants of the putative founder of Cucagna, Schinella [\* 945]; named in the foundation charter which is to be narrowed down to 1027 and is first known in the oldest copy from 1492 (according to the evidence by V. Joppi in Documenti friulani, Capsula XV, in Fundus Joppi/Udine, Biblioteca Civica Udinese Cat.-No. 376 – cf. Gaetti, Poiana 1978, 167f.; Timburli 2003, 80); as well as F. pr., Ms. 3666 (Biblioteca comunale Udine – cf. Gaetti, Poiana 1978, 32, 167); for source criticism see Härtel (2006, 134-138) and Grönwald (2010, 67, footnotes 31-35), the castle was administered by the family Zucco di Cucagna.

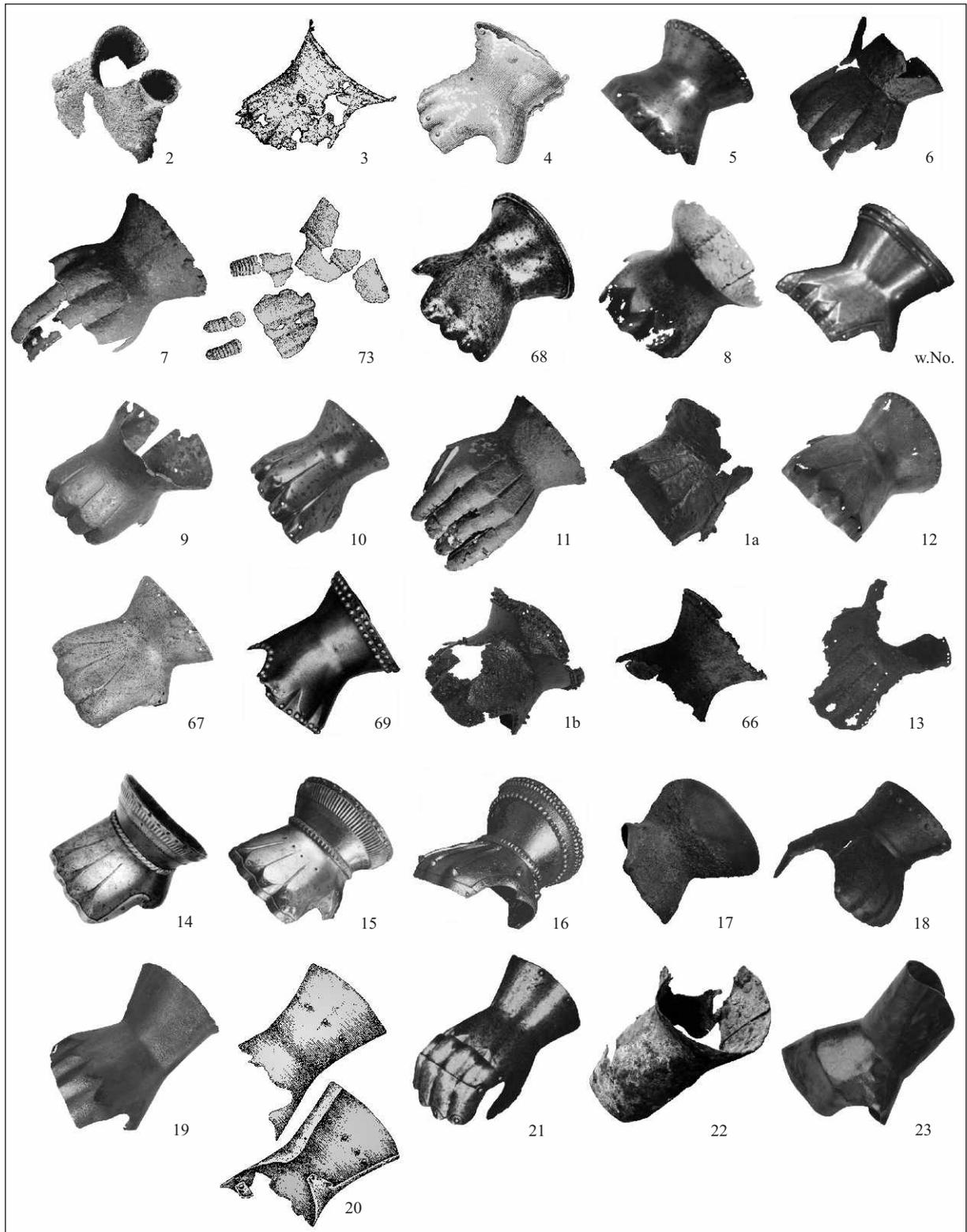


Fig. 12. Castle Tannenberg, Odenwald, Germany. Not previously together published gauntlets which could prove, if they do not come out of different stratigraphical contexts, the parallel use of different types of gauntlets (A – after *Hefner-Alteneck 1850, Taf. X, Abb. E-F*; B – collection of Metropolitan Museum of Art in New York, No. 29.150.108, *photo by M. Goll; adapted by H. Grönwald*; C – Hessisches Landesmuseum Darmstadt, No. W 69:7, *photo by W. Fuhrmannek*).

Ryc. 12. Zamek Tannenberg, Odenwald, Niemcy. Niepublikowane wcześniej wspólnie rękawice, które, jeśli nie pochodzą z różnych kontekstów stratygraficznych, mogą dowodzić, że rękawice różnych typów były używane równocześnie (A – wg *Hefner-Alteneck 1850, Taf. X, Abb. E-F*; B – zbiory Metropolitan Museum of Art w Nowym Jorku, nr inw. 29.150.108, *foto. M. Goll; oprac. H. Grönwald*; C – Hessisches Landesmuseum Darmstadt, nr inw. W 69:7, *foto. W. Fuhrmannek*).

This strikingly late archaeological dating is in contrast to the typological shape of the gauntlet or *Hentze*, which is to be located perhaps already in

the mid-14<sup>th</sup> c., or at least in the second half of that century (which will be explained later on). The manufacture of the item should be rather related to



the period of the palace building (1318-1325) than to the time of its abandonment. It is indicated by parallel analogies to it on the equestrian statue by Bonino da Campione<sup>43</sup> for Bernabò Visconti

(† 1385; No. 61 = Fig. 4) at Castello Sforzesco in Milan and the gauntlets or *Hentzen* (clearly represented in a time-displaced manner) on the epitaph of Reeve or Castellán of Engelsburg

<sup>43</sup> Campione d'Italia (i. e. 1325-1397). Between 1350 and 1390, he was one of the most important masters of Gothic sculpture of Italy.

◁ Fig. 13. Comparison of the hourglass gauntlets. Original finds in the museum collections. From the preserved pairs of gauntlets only artifacts intended for right hand were shown; in case of gauntlet No. 15, the not preserved wrist-ring was reconstructed: 2 – Alt-Weesen, Gaster distr., Kanton St. Gallen, Switzerland, before 1388; 3 – Mülenen, Berner Oberland, Kanton Schwyz, Switzerland, 2<sup>nd</sup> half of the 14<sup>th</sup> c.; 4 – Tannenberg, Odenwald, Germany, before 1399 (after *Hefner-Alteneck 1850, Taf. X:E*); 5 – Leeds, United Kingdom, probably from Vesovera, Italy, Royal Armouries Leeds, Inv. No. III.1713, the end of the 14<sup>th</sup> c.; 6 – Alsnö Hus/Hovgården, Adelsön, Mälaren, Sweden, before 1390; 7 – Ripon, North Yorkshire, United Kingdom, 2<sup>nd</sup> half of the 14<sup>th</sup> c.; 73 – Czychów, Małopolskie voivodeship, Poland, Muzeum Okręgowe w Tarnów, 2<sup>nd</sup> half of the 14<sup>th</sup> c.; 68 – Rom, Engelsburg, Italy, Museo Nazionale di Castel Sant' Angelo, 2<sup>nd</sup> half of the 14<sup>th</sup> c.; 8 – Nuremberg, Germany, Germanische Nationalmuseum, Inv. No. W 1018, 2<sup>nd</sup> half of the 14<sup>th</sup> c.; w.No. – Bashford Dean Memorial Collection, Metropolitan Museum, Inv. No. 29.154.3, before 1399; 9 – Tannenberg, Odenwald, Germany, Metropolitan Museum, Inv. No. 29.150.108, before 1399; 10 – Chartres, Dep. Eure-et-Loire, France, ca. 1380; 11 – Ripon, North Yorkshire, United Kingdom, end of the 14<sup>th</sup> c.; 1a – Cucagna, Faedis, Italy, Inv. No. 2006/395, 2<sup>nd</sup> half of the 14<sup>th</sup> c., arch. before 1511; 12 – Museo Nazionale del Bargello, Florence, Italy, Inv. No. MNB R.13, 2<sup>nd</sup> half of the 14<sup>th</sup> c.; 67 – Museo Stibbert, Florence, Italy, Inv. No. 3551, 1360-1370 (*photo by M. Goll*); 69 – Dresden (later Berlin), Germany, Exhibition-Cat. 1937, No. 205, ca. 1380 (the place of preservation remains unknown); 1b – Cucagna, Faedis, Italy, Inv. No. 2008/034, before 1382; 66 – Kreuzenstein near Leobendorf, Austria, Collection of Kreuzenstein (?), the 4<sup>th</sup> quarter of the 14<sup>th</sup> c.; 13 – Brick Hill Lane, London, United Kingdom, Royal Armouries Leeds Inv. No. III.773, 2<sup>nd</sup> half of the 14<sup>th</sup> c.; 14 – Wallace Collection, London, Great Britain, Inv. No. A.251/2 (the cuff of the gauntlet was reconstructed), 1360-1380; 15 – Churburg, Vinschgau, South Tirol, Italy, Inv. No. CH S12/13, 1361-1370; 16 – Museo Nazionale del Bargello, Florence, Italy, Inv. No. MNB R.12, 1361; 17 – Soffumbergo, Faedis, Italy, before 1420; 18 – Ørum, Midtjylland, Denmark, circa 1380; 19 – Tannenberg, Odenwald, Germany, © Hessisches Landesmuseum Darmstadt, Inv. No. W 69:7, before 1399 (?) (*photo by W. Fuhrmannek*); 20 – Henrichenburg, Castrop-Rauxel, Westfalen, Germany, beginning of the 15<sup>th</sup> c.; 21 – Kreuzenstein near Leobendorf (A), the 15<sup>th</sup> c.; 22 – Schauenburg near Dossenheim, Rhein-Neckar-Kreis, Germany, before 1460; 23 – Haus Herbede, Witten, Ennepe-Ruhr-Kreis, Germany, Westfälisches Landesmuseum Herne, Inv. No. M 1731, 1st half of the 15<sup>th</sup> c. (*photo by S. Brentführer*).

◁ Ryc. 13. Porównanie rękawic klepsydrowych. Oryginalne zabytki w kolekcjach muzealnych. Z zachowanych par zabytków ukazano jedynie prawe rękawice; w przypadku rękawicy nr 15 zrekonstruowano nie zachowany pierścień obejmujący nadgarstek: 2 – Alt-Weesen, pow. Gaster, Kanton St. Gallen, Szwajcaria, przed 1388 r.; 3 – Mülenen, Berner Oberland, Kanton Schwyz, Szwajcaria, 2. połowa XIV w.; 4 – Tannenberg, Odenwald, Niemcy, przed 1399 r. (wg *Hefner-Alteneck 1850, Taf. X:E*); 5 – Leeds, Wielka Brytania, prawdopodobnie z Vesovera, Włochy, Royal Armouries Leed, nr inw. III.1713, koniec XIV w.; 6 – Alsnö Hus/Hovgården, Adelsön, Mälaren, Szwecja, przed 1390 r.; 7 – Ripon, North Yorkshire, Wielka Brytania, 2. połowa XIV w.; 73 – Czychów, woj. małopolskie, Polska, Muzeum Okręgowe w Tarnowie, 2. połowa XIV w.; 68 – Rom, Engelsburg, Włochy, Museo Nazionale di Castel Sant' Angelo, 2. połowa XIV w.; 8 – Norymberga, Niemcy, Germanische Nationalmuseum w Norymberdze, nr inw. W 1018, 2. połowa XIV w.; bez nr. – Bashford Dean Memorial Collection, Metropolitan Museum, nr inw. 29.154.3, przed 1399 r.; 9 – Tannenberg, Odenwald, Niemcy, Metropolitan Museum, nr inw. 29.150.108, przed 1399 r.; 10 – Chartres, dep. Eure-et-Loire, Francja, ok. 1380 r.; 11 – Ripon, North Yorkshire, Wielka Brytania, koniec XIV(?) w.; 1a – Cucagna, Faedis, Włochy, nr inw., 2. połowa XIV w., kontekst arch. przed 1511 r.; 12 – Museo Nazionale del Bargello, Florencja, Włochy, nr inw. MNB R.13, 2. połowa XIV w.; 67 – Museo Stibbert, Florencja, Włochy, nr inw. 3551, 1360-1370 (*foto. M. Goll*); 69 – Drezno (później Berlin), Niemcy, kat. wystawy 1937, nr 205, ok. 1380 r. (miejsce przechowywania nieznane); 1b – Cucagna, Faedis, Włochy, nr inw. 2008/034, przed 1382 r.; 66 – Kreuzenstein pod Leobendorfem, Austria, Kolekcja Kreuzensteina (?), 4. ćwierć XIV w.; 13 – Brick Hill Lane, Londyn, Wielka Brytania, Royal Armouries Leeds, nr inw. III.773, 2. połowa XIV w.; 14 – Wallace Collection, Londyn, Wielka Brytania, nr inw. A.251/2 (mankiet rękawicy zrekonstruowano), l. 1360-1380; 15 – Churburg, Vinschgau, Południowy Tyrol, Włochy, nr inw. CH S12/13, l. 1361-1370; 16 – Museo Nazionale del Bargello, Florencja, Włochy, nr inw. MNB R.12, 1361; 17 – Soffumbergo, Faedis, Włochy, przed 1420 r.; 18 – Ørum, Midtjylland, Dania, ok. 1380 r.; 19 – Tannenberg, Odenwald, Niemcy, © Hessisches Landesmuseum Darmstadt, nr inw. W 69:7, przed 1399 r. (?) (*foto. W. Fuhrmannek*); 20 – Henrichenburg, Castrop-Rauxel, Westfalia, Niemcy, początek XV w.; 21 – Kreuzenstein pod Leobendorfem, Austria, XV w.; 22 – Schauenburg pod Dossenheim, Rhein-Neckar-Kreis, Niemcy, przed 1460 r.; 23 – Haus Herbede, Witten, Ennepe-Ruhr-Kreis, Niemcy, Westfälisches Landesmuseum Herne, nr inw. M 1731, 1. połowa XV w. (*foto. S. Brentführer*).

Antonio Rizzo or Rido di Padua († 1450; No. 65) in Chiesa di Santa Francesca Romana (Rome), for how long comparable parts of armour may have been used. This is to be discussed later on<sup>44</sup>. The gauntlets or *Hentzen* of the statue of Bernabò, with their astonishing attention to detail, could perhaps originate with the knowledge of directly available items of local manufacture, if not actually after the model of his personal property, which was certainly fashionable according to contemporary state of the art (cf. Vergani 2001 – with numerous figures)<sup>45</sup>. A similar phenomenon concerning

property situation may have occurred with the gloves on the tombstone of Duke Bolesław II or V the Small, also called Bolko II (from the Świdnica branch of the Silesian Piasts, † 28 July 1368; No. 62)<sup>46</sup>, which also most closely correspond to the find from Palazzo III A. Therefore, this is an example of a not belated reception of perhaps Italian elements.

While this find from Cucagna is already worth mentioning as an individual item of the type of find which is rarely proved archaeologically<sup>47</sup>; the other element actually suggests a find

<sup>44</sup> Furthermore, it was perhaps a widespread habit to adapt old parts of armour to fashion trends. Exemplary items from the research by M. Goll (cf. footnote 115), although they are chronologically later, are, e.g., a breastplate in the Philadelphia Museum of Art (Inv. No. 1977.167.135) from the period around 1480. It is painted in the manner of black and white armours from the 2<sup>nd</sup> half of the 16<sup>th</sup> c. In the case of a houndskull helmet (datable to c. 1400) in the collection at the Castle of Valeria in Sitten/Sion, Switzerland (Inv. No. MV24), the snout-like visor was replaced with one corresponding to a burgonet forehead guard of the 2<sup>nd</sup> half of the 16<sup>th</sup> c.

<sup>45</sup> Bernabò Visconti with his exalted appearance can be considered an extraordinary example of appearing status-aware representatives of the courtly power structure and culture.

<sup>46</sup> Ducal chapel of the former Cistercian Abbey Grüssau (until 1292 Benedictine) in Krzeszów in Kamienna Góra distr., Dolnośląskie Voivodeship, Poland. It should be probably assumed that the tombstone originated only with a temporal delay of some years.

<sup>47</sup> Furthermore, it was never associated with corresponding skeleton parts – nor were the plate gloves in the graves at Visby (cf. Thordemann 1939, 231).



Fig. 14. Castello di Soffumbergo, Faedis, Italy. Hourglass gauntlet (the cuff was strongly reconstructed) and a fragment of the lame of the cuff. Photo and adapted by H. Grönwald.

Ryc. 14. Castello di Soffumbergo, gm. Faedis, Włochy. Rękawica klepsydrowa (mankiet częściowo zrekonstruowany) i fragment taśmy z mankietu. Fot. i oprac. H. Grönwald.

concentration (No. 1b; Figs. 5-7; 12-13; length 13.3 cm, width 12.7 cm, height 9.5 cm; weight: 206.57 g – without the damage at least 232.40 g)<sup>48</sup>. It appeared in a surprising way in 2008 during test excavations of Palazzo IV B in the newly discovered fore-castle (outer bailey), which has been to a great degree preserved in an undestroyed form. In relation to a small spur of land on the mountain crest, it remained unattended until then and was hardly noticeable on the surface due to the extreme position of the hillside, strong vegetation and not precise topographical maps<sup>49</sup>, although the buildings of the core of the castle, which were in their greatest part preserved and restored, protrude upwards at a distance of only few metres from it<sup>50</sup>.

No direct historical sources are available to address the significantly earlier discovered gauntlets or *Hentzen*<sup>51</sup>. Therefore, any dating which may be attributed to them is to be excluded<sup>52</sup>. The archaeological find alone is to be consulted;

furthermore, together with the coins which were related to it in the closed find, it gives a relatively certain limitation of its chronological framework<sup>53</sup>. Individual datings of these coins would be per se hardly significant, if these were not corresponding to each other in a chronological sense and if they did not suggest by themselves the chronologically close insertion into the find and its *terminus post quem*. For the origin of the building and the remaining material, an *ante quem* dating is also offered by them, as the coins are to be related to their protagonists and to historical events<sup>54</sup>. A denar of Louis I of Hungary (1342-1383) and an extraordinarily rarely found piccolo (petty denar) of Philip of Alençon (1381/1382-1388, †1397) correspond to each other concerning their chronology; furthermore, the latter specimen had only a short period of circulation (Fig. 8). The direct destruction horizon of the building, which clearly demonstrates itself and corresponds to the

<sup>48</sup> Cat.-No. 2008/034. Explored on 27 July 2008, conservation by Susanne Litty (28 July – 14 August 2008; conservation protocol from 14 October 2008).

<sup>49</sup> Cf. ordinance survey map sheet: Carta Technica delle Regione Autonoma Friuli-Venezia-Giulia, Faedis; Sheet 067013.

<sup>50</sup> The focus of test excavations was the agriculturally cultivated environment, as well as the detailed recording of the terrain situation and surface.

<sup>51</sup> These were eagerly consulted earlier, as there was no alternative.

<sup>52</sup> As, e.g., with an analogous find from Hühneberg in Switzerland, whose assessment should not be questioned (see below; cf. Frey 2009, 100f.; for the purpose of dating, analogously to historical sources, finds and coin finds from the entire area without mutual stratigraphic relations were used in a generalised manner), or the finds from the Castle of Tannenberg, which was possibly destroyed after the siege against robber-knights in 1399 (on the other hand, the last buildings were pulled down there only in 1460 and an earlier association of finds is also possible. This, however, is not possible to be reconstructed, due to shortcomings in documentation of the old excavation).

<sup>53</sup> Similarly to the find situation in Alsnö Hus, Hovgården, Adelsön, Mälaren, Sweden (cf. footnote 117).

<sup>54</sup> For historical circumstances see Grönwald (2010, 69).



Fig. 15. Selection of the images of the armorers and armor polishers from the *Hausbuch der Mendelschen Zwölfbrüderstiftung* in Nuremberg, that are also depicting gauntlets: 1 – Polierer Georg, folio 7v; 2 – Bernhard Polyrer, folio 17r; 3 – Bernhard Platner, folio 42r; 4 – Hans Derrer, folio 87r; 5 – Hans Pernecker, folio 101v (after *Mendelsche Zwölfbrüderstiftung*, Amb. 317.2°, Band 1, © Stadtbibliothek Nürnberg).

Ryc. 15. Wybór przedstawień platnerzy i polerowaczy zbroi z kart *Hausbuch der Mendelschen Zwölfbrüderstiftung* w Norymbergi, gdzie wyobrazono również rękawice: 1 – Polierer Georg, folio 7v; 2 – Bernhard Polyrer, folio 17r; 3 – Bernhard Platner, folio 42r; 4 – Hans Derrer, folio 87r; 5 – Hans Pernecker, folio 101v (wg *Mendelsche Zwölfbrüderstiftung*, Amb. 317.2°, Band 1, © Stadtbibliothek Nürnberg).

coins, also contained numerous projectile heads and covered the surface horizon on the clay floor<sup>55</sup>. The gauntlet or *Hentze*, however, comes from a debris horizon, which lay above the fire and debris layer that covered the brick fragments of the floors of the collapsed upper storeys and of the roof (Fig. 9, Section 2). The fact that the loss of the gauntlet or *Hentze* is to be related to the same phenomenon was to be first demonstrated with the exposition of Palazzo IV A, which is attached

upwards the slope. There was a corresponding destruction layer, with overlaying traces of secondary usage, such as lime and sand bed for preparing mortar, possibly a lime kiln and a fire pit, which cut through all the layers down to the once massive cobbled pavements in the basement (Fig. 9, Section 3 A-B). Therefore, the gauntlet or *Hentze* from Palazzo IV B actually belongs to IV A, or to its destroyed remains (with the destruction having taken place at the same time). The bailey

<sup>55</sup> Such finds as a strap distributor and fragments of a horseshoe rested on it.

which originated between 1160/1161 and 1186<sup>56</sup>, and its palace-like central building with Palazzo IV A was built new under Adalprete the Younger († 1325)<sup>57</sup> in the 2<sup>nd</sup> half of the 13<sup>th</sup> c. In the mid-14<sup>th</sup> c., it was provided with an extension (Palazzo IV B). This bailey demonstrates a contrastingly bad state of preservation of its structural parts as compared with the core of the castle. It can be explained with an unsuccessful siege of Cucagna by troops of the Patriarch in the 1380s (the siege was not mentioned in sources), which only devastated the bailey and the vicinity of the castle. The outer ward was then left open and was used for building materials<sup>58</sup>. The gauntlet or *Hentze* from Palazzo IV stands out due to its rich ornament with brass rivets which once appeared as golden ones (Fig. 7)<sup>59</sup>. Until now, no quantitative material analysis has been possible<sup>60</sup>; however, on the basis of white-gray crystalline corrosion products over dark green patina, which was noticeable in the state of discovery, the use of zinc ore (which cannot be specified any further yet) is to be assumed for the rivet alloy (cf. Selwyn 2004, 53f and 153f)<sup>61</sup>. This distinguishes the material from contemporary bronze alloys<sup>62</sup> and possibly more conveniently achieved the effect of valuable glowing studs. It is an absolutely usual phenomenon that on parts of armour iron rivets can often be found, whose partially gilded heads of copper alloy were covered with tin solder. The peculiar shaping of the cuff edge and the use of various material link the other gauntlet or *Hentze* from Cucagna on the one hand quite closely to the pair of gloves of Ulrich IV von Matsch, which are preserved in the Museo Nazionale del Bargello in Florence (No. 16)<sup>63</sup>. On the other hand, also to a simpler left-side model

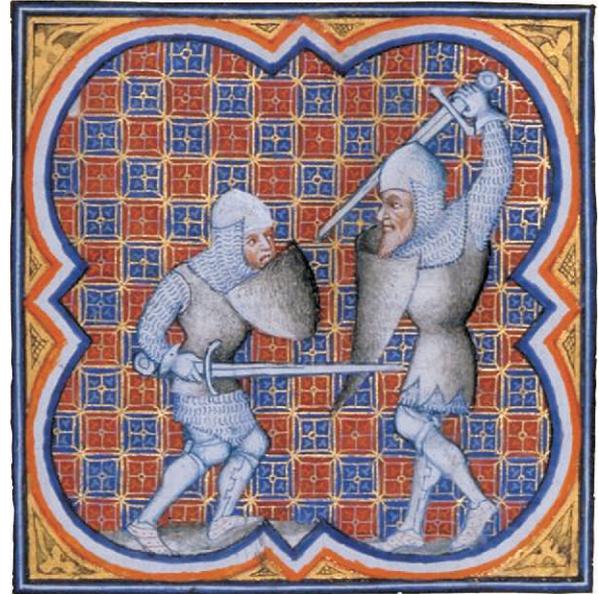


Fig. 16. Knightly fight from the time of Charles' V. (\* 1338, † 1380), here as a miniature Roland fights Ferragut in the *Grandes Chroniques de France* in *Grandes Chroniques de France* (Bibliothèque Nationale in Paris, Ms Français 2813).

Ryc. 16. Pojedynek rycerski z czasów Karola V (\* 1338, † 1380), tutaj jako miniatura z Rolandem walczącym przeciw Ferragutowi w *Grandes Chroniques de France* (Bibliothèque Nationale w Paryżu, Ms Français 2813).

which comes from the resources of the Dresdner Rüstkammer and was once kept in Berlin (dated to c. 1380; No. 69)<sup>64</sup>. However, the preserved studs of 156 rivets (with rivet holes 172, reconstructable 188) is composed of various forms of rivets: ornamental decorative rivets of brass (137 altogether), brass bolts with a double function (with flat internal rivet heads, which hold an iron

<sup>56</sup> Ulrich II von Treffen/Treven permitted Walter/Guarnero and his son Ulrico to built a tower (*ad elevare una torre di forma quadrata, chiamata poi cuccagna*; cf. Galvani 1960, 22) *in colle qui dicitur Rodingerius situs subter castrum cuccanee*. In 1186 the new Castle of Cucagna is mentioned (*ibidem*, 22, IIC 1994, 93; Custozza, d' Arcano 1995, 71).

<sup>57</sup> The son of an Adalprete and possibly the uncle of Joannes II/Joan de Cucanh († 1272) (cf. Grönwald 2005, 186, Fig. 65).

<sup>58</sup> Communes, ministeriales and castellans rose between 1381 and 1388 against the Bourbon Patriarchs and partially joined (as Cucagna did) the side of Louis I, together with the Habsburg partisanship. Moreover, Louis I proceeded against Venice and obtained Dalmatia after two wars which were partially waged in Friuli (1356-1358 and 1378-1381; concerning the relations with the Empire in contacts with Italy and the Papal Court – cf. Steinherz 1887, 219-257; 1888, 529-637).

<sup>59</sup> A contemporary term would possibly be *auricalcum*, which is to be understood as high medieval brass alloy in Theophilus Presbyter's *De Diversis Artibus* (cf. Neumüller 1973, 1215; as well as Brepohl 1999, 176, 193).

<sup>60</sup> E.g., an XRD-analysis of the phase content of the corrosion products.

<sup>61</sup> The aim was a malleable alloy, which could also be to some extent hammered onto, e.g., iron nails or bolts.

<sup>62</sup> E.g., from the bell metal of "Aeramentum" or "Aes", in which in place of *calamina* zinc ore zinc was added to copper, apart from other components.

<sup>63</sup> Inv.-No. MNB R.12 (c. 18,0 x 12,0 cm; each item 355 g); Milanese master AN or AM (c. 1370; cf. Scalini 1984, 9-15, 18f.; including further reading: Scalini et al. 1995, 51, Fig. 5).

<sup>64</sup> Formerly, the exhibition catalogue No. 205, without ornamental rivets on the plates protecting the back of the hand (cf. Uhlemann 1937, 2f., Fig. 1). I thank Mr Sven Lüken from the Deutsches Historisches Museum in Berlin (DHM) for being so kind as to provide me with information concerning the specimen and the resources of the collection. Regrettably, the gauntlet or *Hentze* is not in the DHM at present, although it is not recorded under the World War II losses, either. It is unclear whether it went back to the former Historisches Museum in Dresden (it was acquired therefrom by Tausch in 1936), or where it remained (it is not exhibited in the present day Rüstkammer der Staatlichen Kunstsammlungen in Dresden).

end plate for fixing the lining<sup>65</sup>, and mounted external ball heads) and iron rivets with small heads and plate-like shaping on the inside for fastening the lining with organic material (Fig. 7). The double-row rivet edging on the cuff edge is oriented in a paired manner, but it is not arranged exactly above one another and iron rivets for fixing the lining are inserted between the rows of balls at intervals of six to seven decorative rivets<sup>66</sup>. Furthermore, in the row which is directed towards the back of the hand, there are more rivets than on the edge. In this place, a repair rivet is preserved, which probably replaced a double function rivet which was lost due to mechanical wear, with a small iron plate as a head (Fig. 10). The particularly amateurish workmanship could mean that one did not seek for a specialised craftsman due to cost or time constraints and the completion took place in a mobile workshop<sup>67</sup>. On the edge of the glove, between the thumb and the index finger, a single-row edging of 16 rivets goes in an arch-shaped manner. These mostly had ball heads. Two fixed the lining or an external covering from the inside with the end plate; attention is drawn to three defects and two iron rivets with no prominent heads. Along this row there were four fixing rivets, out of which two have been preserved. The knuckles are enclosed each with two rows of three rivets (including the thumb, which is more directed towards the joint ball). The respective rivet pair in the direction of the back of the hand is completed with brass decorative rivets while the rivets on the knuckle edge are made of iron and they are provided with an internal end plate (ornamental brass heads are possibly lost here).

Ornamental groups with each consisting of three ball head rivets of brass on the back of the hand (three have been preserved and four are reconstructable) are peculiar. Balls are grouped under the term of “roundels” (*Billen*) as plastic

so-called “ordinaries”, which are a popular heraldic motif<sup>68</sup>. Their arrangement, which perhaps suggests textile flower ornament, is almost unique among preserved armoured gloves which were available for research, as well as among comparable depictions. Almost identical (with its state of preservation also speaking for an excavation find) is only a left hand gauntlet or *Hentze* which is possibly stored at the Castle of Kreuzenstein near Leobendorf, Austria (No. 66), whose whereabouts and preservation are still to be examined<sup>69</sup>. It also possesses a double row of rivets on the cuff edge and rivets in groups of three on the plate protecting the back of the hand. However, the knuckle part has not survived.

The ornament of the rivet groups can be understood as a circumferential line or a decoration of tapering knuckle interspaces. As in the case of the painting of the glove on the grave of Robert du Bois in the parish church of Fersfield in Norfolk (c. 1340; No. 26), which suggests a textile design of the tabard, the ornament of the gauntlet or *Hentze* from Cucagna could possibly have its counterparts on other parts of the armament or clothes. Colouring or even leather or textile covering can also be imagined, with which the golden balls clearly contrasted<sup>70</sup>. Regrettably, nothing has remained of it, which prevents us from drawing conclusions concerning a possible coat of arms of the bearer and his closer identification. Relating him to the North Alps region is to a great degree ruled out<sup>71</sup>. An Italian relation can be most likely located in these regions, where roundels (*Billen*) appear in groups of three – these do not, however, on the Florentine coat of arms of the Medici. More possibly, he can be related to the House of Savoy or Piémont<sup>72</sup>, which, in the 2<sup>nd</sup> half of the 14<sup>th</sup> c., intensively strived for Italian possessions, mediated between Scaliger and Visconti as well as between Venice and Genoa after the War of Chioggia in

<sup>65</sup> A lining of leather or plant fibre textiles – putatively in individual straps, onto which the internal glove could also be sewn. Indeed, an external covering may also have been fixed by means of that, having been wrapped inwards on the end of the plate and fixed inside with the shims.

<sup>66</sup> Its protrusion on the internal side of the defence demonstrates, e.g., the thickness of the leather lining or the base material, which was c. 0.6-1.2 mm. This gauntlet or *Hentze* was also lined with it up to the cuff edge. This base material – as in the specimen Cat. No. 2006-365 – accommodated the lining material in a reverse manner and fixed it additionally to the rivets.

<sup>67</sup> Possibly, with limited opportunities during a siege.

<sup>68</sup> Here these are perhaps not to be understood as the breads of St Nicholas of Myra, which are represented in a similar way in municipal coats of arms.

<sup>69</sup> Recorded in an unpublished catalogue manuscript from the 1920s of the collection of the Wilhelminian style Schauburg, which is kept in the resources of the Hofjagd- und Rüstkammer (Neue Burg) of the Kunsthistorisches Museum in Wien. An examination of the specimen was not possible to be carried out personally at Kreuzstein. However, I thank to Mr Hans Christian Wilczek for acknowledgement of an inquiry.

<sup>70</sup> In the case of a covering, the rivets of the back plate could strain the covering material into the corrugations between the knuckle shapings.

<sup>71</sup> There, e.g., the Svabian family of Feyberg/Vriberc, which claimed a Graubünden (Grisons) origin, possessed a coat of arms of that kind.

<sup>72</sup> A homonymous branch of the county family introduced a similar coat of arms, e.g., in Le Bourget du Lac.

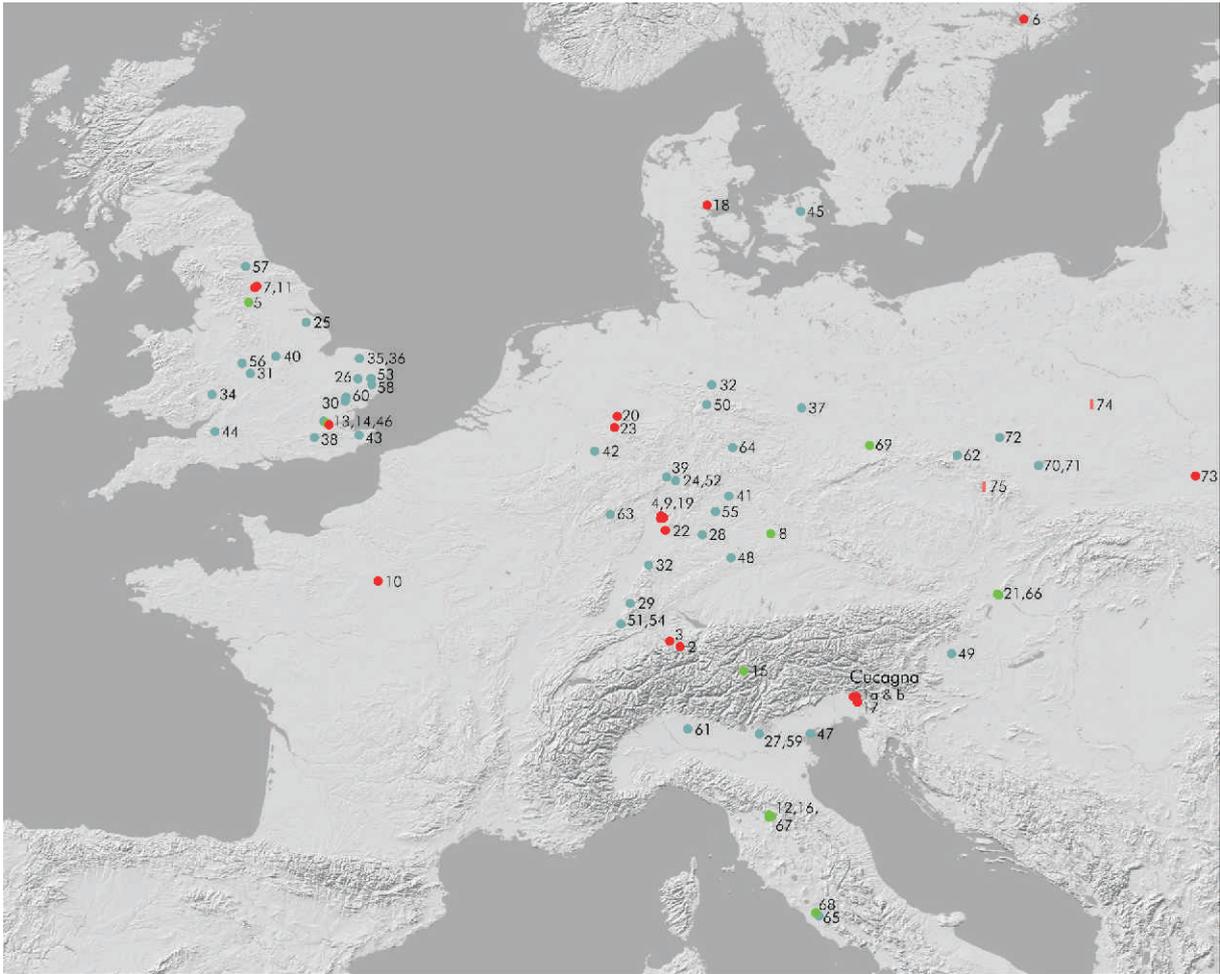


Fig. 17. Hourglass gauntlets from Central and Western Europe: ● – archaeological finds (■ - elements of protection of fingers); ● – original specimens in museum collections; ● – selection of depictions from a tomb slabs mentioned in the article. *Drawing by H. Grönwald.*

Ryc. 17. Rękawice klepsydrowe ze środkowej i zachodniej Europy: ● – znaleziska archeologiczne (■ - elementy osłon palców); ● – oryginalne zabytki w kolekcjach muzealnych; ● – przykłady przedstawień rękawic z nagrobków wspomnianych w tekście. *Rys. H. Grönwald.*

1381 and supported Philip of Alençon in a close family relation to the Bourbons. The roundels or *Billen*, which are widespread in French heraldry, are based on the coat of arms ornament of the royal family, which offers an additional chronological framework for the origin of the glove. The lilies, which were previously densely placed on it, are limited to a group of three since 1376.

Whatever the rivets on the gauntlet or *Hentze* from Cucagna stand for, lavish studs of these somehow introduced the development of plate gloves (cf. Thordeman 1939, 241) and to a great degree aimed at a representative appearance. This was the case even when a small metal plate was joined with it under a coating of organic or textile material. The peak point of the fashion for plate gloves consisting of small

parts was in the mid-14<sup>th</sup> c. and it seems to have been reserved to the wealthy social sphere (cf. Post 1933, 47), if not to really high-status courtly circle. Top-class products, such as these for the court of Jean II (John the Good: 1350-1364), for which the armourers (or rather white- or silversmiths) used around 860, 1000, or even 1200 rivets (1352 – Post 1933, 46; Thordeman 1939, 24; after it Frey 2009, 97 footnote 27), were obviously hardly meant for practical application. This is in contrast to also lavishly beset contemporary original specimens with iron rivets<sup>73</sup>. The fashion of such studs constitutes a link between plate gloves made of numerous individual segments and one-part hand defences, which will be discussed later. Allegedly, in the case of a fragment of an

<sup>73</sup> In an exemplary manner on Visby Armoured Gloves 2 and 4 (at least up to 650 rivets can be proved; Thordeman 1939, 415-421, Figs. 410, 414).

hourglass hand defence in the Tower of London<sup>74</sup>, remains of a cover of organic material which was fixed with rivets were once preserved (no Fig.)<sup>75</sup>.

Defences of larger metal sheets – be it hourglass ones and consisting of numerous telescoped plates or made of one piece – require an earlier fixing of internal lining, especially at the cuff edge. Therefore, the rivet rows of the find from Palazzo IV B derive from rivets of earlier hourglass hand defences. These rivets are placed in one row at greater intervals. A double rivet row around the cuff can also be found on a specimen from Brick (Hill) Lane in London (No. 13). The ornament of the plate protecting the back of the hand in the case of the find from Cucagna, which acts as an upgrade of the type known from Palazzo III A, suggests a close relationship with it, even if the articulated array of the rivets on the London specimen suggests the pattern of ribs of the back of the hand<sup>76</sup>.

The gauntlet or *Hentze* from Palazzo IV also bears two marks, which are punched with steel punches directly above each other. These belong to the earliest evidence of smith's marks on parts of armour parts<sup>77</sup> (Fig. 10). Their definite identification and relation to a specified craftsman is still pending<sup>78</sup>, but formal similarities suggest an Italian place of manufacture, if not directly Milan (see below). The original manufacturer's mark seems to have been completed with an inspection's or armoury's mark<sup>79</sup> – such a practice can hardly be assumed for a ministerial castle. The item is rather to be attributed to a member and the resources of a municipal garrison or a standing army – therefore, to the troops of the Patriarch

which attacked the Castle of Cucagna. Attention is also to be paid to the last detail, which can be crucial for a typological classification: the cuff is elaborated with highest quality repoussé work to such an extent that it fully encompassed the wrist and it was locked only with a small (broken) plate rearwards above the arteries. It did not need a plate which would be worked in between, as it is the case with the find from Palazzo III A (see above).

### High and late medieval hand defences

The presentation of the gauntlets or *Hentzen* from Cucagna and references to comparative items makes it perhaps clear that in the case of already known and allocable finds, new evaluations are possible<sup>80</sup>: hand defences of one coherent metal sheet found – in the light of “early” forms of various material combinations<sup>81</sup> – wide distribution in the equipment of high-status warriors (Fig. 13). The repoussé shaping of the hand protection made of one plate of iron, which leaves the palm of the hand open, corresponds to the anatomy of the hand and secures the possibly greatest manual mobility as an effective compromise with the martial requirements<sup>82</sup>. The function requires the eponymous funnel-shaped cones, which move inwards on the wrists: the massive cuff with the plate stretching over the knuckles of the back of the hand should offer a firm protection of the back of the hand against the strike impact. By contrast, the fingers, which were from time to time enclosed with small metal plates<sup>83</sup>, remained free and mobile in the glove. Metal/brazen finger defences made of small plates have hitherto rarely been found in a direct relation with hourglass gauntlets or

<sup>74</sup> Previously in its armoury, stored among finds in the table cabinets of the second room; find place is unknown, putatively a product of an English smithy which can be attributed to the late 14<sup>th</sup> c. (Loftie 1897, 29; Armoury of the Tower of London, I 3 I). At present, according to information from M. Goll (cf. footnote 115) nothing can be found out about the whereabouts of the specimen, and our own inquiries to the museum remained unanswered.

<sup>75</sup> Thordeman (1939, 236, footnote 163) – given as a comparative example for fabric coverings of the Visby gloves (cf. Laking 1920b, Fig. 562). Also for gloves No. 14–16 in Fig. 13 an external fabric covering is plausible.

<sup>76</sup> Old find of the 19<sup>th</sup> c., at present in the *Royal Armouries* Leeds (Inv. No. III. 773) (cf. Williams 2002, 356; image in Gravett 2002, 56). For continuous ribs of the back of the hand cf., e.g., the gloves of Ulrich IV von Matsch in the Museo Nazionale del Bargello in Florence (footnote 99; 165).

<sup>77</sup> Until now, four are known from the 14<sup>th</sup> c. (a list of known smith's marks on defensive arms with dating: Williams 2002, 62–64; for possible meanings cf. Röber 2004). In the search for a comparable mark it would be necessary, apart from the comparison of the rivet assembly, to assess the gauntlet or *Hentze* from Kreuzenstein (No. 66) – possibly these are items from one workshop.

<sup>78</sup> The author will be obliged for suggestions.

<sup>79</sup> The other punch which was placed during inventorying of a weaponry or armoury chamber (cf. Röber 2004, 142–144; I thank Matthias Fröhlich for crucial suggestions for analysis of the marks).

<sup>80</sup> Essential developments of plate gloves were briefly summarised again based on Thordeman (Frey 2009). In this case, individual research on them was reduced to a stringent development, as almost every find which was discussed by him represented a special type and raised new questions (cf. Post 1933, 44).

<sup>81</sup> Organic material. Early forms received from time to time protective plates of whale bone (items were still made in such manner as late as 1290 in Paris – cf. Thordeman 1939, 232, footnote 145f.)

<sup>82</sup> Which is why the also customary term of “stiff gauntlet” (*steifer Handschutz*) is not used here.

<sup>83</sup> Fixed on the leather base material and not attached to one another.

*Hentzen*, or hand defences of that kind<sup>84</sup>. Apart from “old finds”, attention is to be paid especially to new evidence from the territory of Poland<sup>85</sup>. It includes both different common basic types of flexible finger armouring: a thick covering of individual overlapping metal sheets over the entire length of the fingers (respectively riveted under the overlay on leather straps), or three elongated sheets per finger respectively over individual phalanges. Their ends, directed towards one another, covered the boss-shaped or pyramidally formed metal sheets with riveting<sup>86</sup>. The widespread covering of glove fingers with both kinds of such plates is also proved by numerous visual sources<sup>87</sup>. Originals on base material are rarely preserved<sup>88</sup>. At Cucagna, these could not be proved until now, while at other places, they are also found individually<sup>89</sup>.

After the advent of iron protectors in the 12<sup>th</sup> c.<sup>90</sup>, hand defences made of “chain” or chain mail dominated until the 1<sup>st</sup> quarter of the 14<sup>th</sup> c.: these were rough mittens as part of the chain mail hauberks, or were worn separately on thick glove lining. They were bound together and fastened at the wrist with a narrow chain with metal hook or in a similar way. Even with attached thumbs the fine motor ability was limited, which is why sometimes

fingertips and palms were left uncovered by the mail<sup>91</sup>. As impact protection, apart from padding elements, plates covering the back of the hand were sometimes fixed on these – it was the origin of all iron plate gloves and gauntlets or *Hentzen*. The “simple” forms were, however, never abandoned<sup>92</sup>. Analogously to body or breast defences, there also emerged small metal plates which were riveted on leather or textile gloves. Perhaps already in the 2<sup>nd</sup> quarter of the 13<sup>th</sup> c., such small plates completed protective plates made of one larger sheet of metal. Long after the early 14<sup>th</sup> c., multi-part applications of small plates on organic material were preferred, due to reliable opportunities of haptic freedom offered by these<sup>93</sup>. Finds from the Hanseatic town of Visby in Gotland<sup>94</sup> (Nørlund, Thordeman 1931; Thordeman 1939, 230-244, 414-434) and numerous specimens from Westphalia are known: from the Kugelsburg<sup>95</sup>, from the Castle of Kakesbeck in Bechtrup<sup>96</sup> and from Lipperode<sup>97</sup>. In addition, there are examples from the excavations at the Castle of Boringholm in Jutland<sup>98</sup> and from the Gesslerburg near Küßnacht<sup>99</sup>. Later finds, comparable with one of the plates protecting the back of the hand or the metapodium which were found at Visby, come from the Castle of Bolesławiec nad Prosną in Poland<sup>100</sup>,

<sup>84</sup> Apart from the fingers of the gloves from the Cathedral in Ripon (Nos. 8 and 12; Mann 1942, 113-122, Pl. 8), e.g., in Alsnö Hus (No. 7; Thordeman 1939, 235-236, Fig. 215), from which in 1920 only the finger defences were published (Thordeman 1920, 57f., Fig. 27:11), and the item itself was reserved for the Visby publication of 1939, or the Castle of Ørum with a preserved thumb defence (No. 18; Thordeman 1939, 236f.). Analogously to the finger plates which were found at Tannenberg, further finds were generally related to gloves, which cannot be verified due to the loss of parts (cf. Schmitt 2008, 166; after Müller-Hickler 1923, 32).

<sup>85</sup> E.g., from the residence in Nowe Miasto nad Wartą, Wielkopolskie Voivodeship (cf. Grygiel, Jurek, 1996, 87, 127 Fig. 101:1-4), from the Castle in Czchów, Małopolskie Voivodeship (No. 73; cf. Marek 2008, 101, as well as Szpunar, Glinianowicz 2006, 139f., Fig. 6), from the Castle of Bolesławiec nad Prosną, Łódzkie Voivodeship (cf. Marek 2008, 101; after Maik 1997), from Grunwald/Tannenberg (No. 74; Stębark Find Place 1 near the chapel of the fallen; it is perhaps to be related to the events of 1410 and the way of the Teutonic retreat – cf. Nowakowski 1990, 59; as well as Mielczarek et al. 1992, 85, Fig. 5), as well as the Castle of Szczerba/Schnallenstein, Silesia (No. 75; cf. Marek 2008, 90, Fig. 4: 1-3).

<sup>86</sup> The finds from the Castle of Czchów belong to the first type and these from Grunwald and Szczerba – to the second one (they are recorded in the map here, as there are indications speaking in favour of their classification as hourglass gauntlets or *Hentzen*).

<sup>87</sup> Chain mail does not appear on representations as finger defences, which can be partially attributed to their composition of numerous small parts, which is difficult to render.

<sup>88</sup> Cf. Nos. 7 and 11, as well as in the case of the funeral glove in Canterbury.

<sup>89</sup> E.g., in Hertogenbosch (cf. Nijhof 2007, 241, Fig. 4).

<sup>90</sup> Perhaps depicted for the first time on the seal of Richard the Lionheart on a charter from 1195 (cf. Thordeman 1939, 232).

<sup>91</sup> In this way, it is still represented among the chain mail from Visby (cf. Post 1933, 44). In Central Europe finds are rare; fragments of a specimen from the 13<sup>th</sup> or the early 14<sup>th</sup> c. are known from the castle of Alt-Wartburg in Canton of Aargau (cf. Krauskopf 2005, Pl. 28:1; after Meyer 1974, 75, C 33).

<sup>92</sup> The manufacturing cost of the chain mail excludes these as “cheap variants.” Examples come from as late as the beginning of the 17<sup>th</sup> c. (cf. a late form with the highest quality: Royal Armouries Leeds, Inv. No. III790/Image No.: A4855.138), where the use of earlier chain mail cannot be excluded (e.g., in the case of five hitherto unpublished pairs of gloves, datable to c. 1500, in the Augustinermuseum in Freiburg. There, some of reused ring rows even consist of brass).

<sup>93</sup> In contrast to their visual representations, only metal parts can be archaeologically proved so far, even in the case of the group of gloves from the Visby material, which is exceptional until now (Thordeman 1939, 244).

<sup>94</sup> For a summarising description of the events at Visby see Krauskopf (2007, 249).

<sup>95</sup> Today in the British Museum in London (cf. Thordeman 1939, 233).

<sup>96</sup> Near Lüdinghausen-Bechtrup (cf. Peine et al. 1998, 214f., Figs. 1-4, 7-8 and 11).

<sup>97</sup> Quarter of Lippstadt in Soest District (cf. *ibidem*, 214f., Figs. 5-6).

<sup>98</sup> In the *National Museum Copenhagen* (Thordeman 1939, 234).

<sup>99</sup> Destroyed in 1351 (Thordeman 1939, 233, Fig. 211; Schneider 1984, 120, Cat. No. D1-D2).

<sup>100</sup> Castle destroyed in 1393 and 1396-1401 by Polish troops (cf. Marek 2008, 101; after Maik 1997, 21). The use of this type of gloves is also testified to by the depiction on the epitaph of Duke Henryk VI of Wrocław of the Polish royal dynasty in St. Clare

as well as from Switzerland, e.g., from the Wildenburg (Speck 1986, 62f., Fig. 75) and from the Hünenberg<sup>101</sup>. Interestingly, the metal plates<sup>102</sup> of the latter can be assigned to a more developed type of armoured glove, movable in the wrist due to hinge-joint connection or overlapping lames (so-called *Geschübe*), which have until now been unknown from the period before 1400<sup>103</sup>. Furthermore, archaeological dating of the massive debris or wall rubble lump which contained the find was possible (mid-14<sup>th</sup> or the second half of the 14<sup>th</sup> c.)<sup>104</sup>.

In spite of that, models with larger metal bodies or plates which were firmly joined to one another, or entirely made of one such plate, also undergo their own form evolution. Possibly, an early hand defence of one plate, closely based on the leather glove, can be found in the collection of the Metropolitan Museum in New York (regrettably, it comes from the trade of art, with no evidence of origin and information on find circumstances; therefore, a copy cannot be excluded, either)<sup>105</sup> (Fig. 11). Flat and large-headed rivets fixed the leather underglove to the specimen. The edge, articulated as semi-circular wave represents a rarity of the extremely short and hardly pronounced cuff. In contrast to that, the distal knuckle part anticipates the “typically” pronounced forms of gauntlets or *Henzen*. After inspection of art-historical analogies, it is to be stated that hand protectors of firmly joined metal plates or one plate only were obviously reserved for particular

circles of persons (or types of weaponry). Examples with stiffly joined cuff and hand plate, as, e.g., on the equestrian statue for the tomb of Cangrande della Scala in Verona († 1330; No. 27) and similar multi-part (segmented) forms appeared in the 2<sup>nd</sup> quarter of the 14<sup>th</sup> c.<sup>106</sup> This opposes to traditional views, which only refer to examples dated to after 1368 which were acknowledged by Nørlund and Thordeman<sup>107</sup>. In a relatively short period of time – again, in parallel to the fashion development in the case of leather gloves (cf. Thordemann 1939, 241f., 244) – extended cuffs formed themselves<sup>108</sup>. These were worked out separately or attached to the main body of the hand protector, as on the so-called tomb of Berthold V von Zähringen in the Minster Cathedral in Freiburg († 1218, sculpture around or after 1350, No. 29). They led to the typical form of the “hourglass gloves” of the 2<sup>nd</sup> half of the 14<sup>th</sup> c. (*ibidem*, 234, 244). Enclosing the wrist, they could be closed with buckles or an additional plate. Especially valuable products made of one piece were not provided with it. Nevertheless, also later on among plate gloves, there are examples of initially short cuffs<sup>109</sup>. Although the “classical” design is concentrated in the 3<sup>rd</sup> quarter of the 14<sup>th</sup> c., the pan-European spread, which lasts until the end of the century, can by no means be limited to the period between 1360 and 1370, which has eagerly been maintained since Thordeman’s summarical proposal of the typochronology of plate gloves from Visby<sup>110</sup>. This is manifested by gathering further typical models

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and Hedwig’s Church in Wrocław (Marek 2008, 102). The back plate of a later Gothic glove comes from Spytkowice, Małopolskie Voivodeship (cf. Klimek, Strzyż 2011, 217, Fig. 2:3).

<sup>101</sup> With a typological comparison offered in Frey (2009, 91–102).

<sup>102</sup> A two-part plate protecting the back of the hand (or the wrist plate), a wristband/cuff and two fragments of finger plates (*ibidem*, 93).

<sup>103</sup> A *fingered and triply telescoped armoured glove with iron lames* (so-called *Folgen*) (after Krenn 1992, 80, 89; Frey 2009, 92, footnote 9; for a description of the function see *ibidem*, 93f., Fig. 5).

<sup>104</sup> Associated finds which allow for dating: remains of a beaker and a bowl tile (*ibidem*, 92).

<sup>105</sup> Inv. No. 29.150.106. Similar copies are known, e.g., from the collection of Karl Gimbel, which is why a replica cannot be excluded, in spite of traces of corrosion and layer structure in the material. I want to thank M. Goll for the friendly supply of the picture rights.

<sup>106</sup> Cf. tomb guards on the sarcophagus base of the Holy Sepulchre in the Minster Cathedral in Freiburg (c. 1330; 29 – analogously, various forms of gloves can be found there, from chain mail ones and these with telescoped coverings, to single-piece plate gloves, whose fingers are provided with small metal plates) and on the tomb of the burghmann on Stolberg, Albrecht von Hohenlohe-Möckmühl in the monastic church of Schöntal († 1338; No. 28).

<sup>107</sup> In Post (1933, 46) – the search and compilation of later analogies understandably focused on plate gloves.

<sup>108</sup> Both “cuffless” plate gloves as well as short-cuffed hourglass gloves and gauntlets or *Hentzen* may have been combined with larger leather cuffs (also assumed for a cuffless chain mail glove from Visby). Exemplary representations can be found on a tomb (possibly c. 1340) of the Ascanian Otto IV von Orlamünde in the monastic church of the Himmelkron monastery († 1345; pleated cuff), or on the high relief on the Holy Sepulchre in Straßburg (smooth leather cuff with unclear back view, which was already early referred to with regard to plate gloves; Musée de L’Oeuvre Notre Dame – Post 1933, 47; Thordeman 1939, 239).

<sup>109</sup> On the tomb effigies of Lord Robert Bourchiers in St. Andrew and the Holy Trinity in Halstead († 1349; No. 30), of Nicholas de Longford in St. Chad, Longford († 1350; No. 31 – in both cases, however, the cuff edge is chamfered), of Markgrave Rudolf IV (the Long) in the Abbey of Lichtenthal, Baden-Baden († 1372; No. 32) or of Burkhard von Steinberg in the Roemer- und Pelizaeus-Museum Hildesheim († 1397; No. 33, plaster cast in the Germanisches Nationalmuseum in Nürnberg).

<sup>110</sup> According to Thordeman (1939, 236f., 241, 243), and in spite of his careful relativisation with regard to concurrently extant stages and variants of development. In the light of problems with typochronological classification of a series from the contemporaneously associated material, he already stresses that one should not assume a stringent evolutionary development and sequence of forms (cf. Post 1933, 47).

together. Particularly early representations can be demonstrated in the Anglo-Saxon area, e.g. – even if with a contrasting, possibly separately prepared cuff – on the tomb of Hugh de Audley at St Bartholomew's Church in Much Marcle († 1336; No. 34)<sup>111</sup> and fully pronounced in the case of the grave of Roger de Kerdiston at St Mary's Church in Reepham in Norfolk († 1337; No. 35). Further gloves correspond to this one, such as these on the tombstones of William de Kerdiston (*ibidem*, † 1361; No. 36), of Albrecht II in Barby an der Elbe († 1350; No. 37), of Reginald Cobham at St Peter and Paul's Church in Lingfield († 1361; No. 38), of Johannes von Falkenstein in the monastery of Arnsburg († 1365; No. 39 – with an especially long cuff), of Richard de Willoughbys at St Mary (and All Saints') Church in Willoughby-on-the-Wolds († 1369; No. 40), of Konrad von Seinsheim in Schweinfurt († 1369; No. 41) and of Gottfried IV von Cuyk-Arnsberg in the Cathedral of Köln († 1371; No. 42 – a copy at St John's in Arnsberg-Neheim). The best known example are the gloves of Edward of Woodstock or Plantagenet in Canterbury († 1376; No. 43)<sup>112</sup>. Gloves of Henry Fitzroger at St Mary's Church in Chewton Mendip († 1388 or 1350; No. 44) with their rivet row on the cuff edge are similar to these.

The find from Palazzo III A from Cucagna is exemplary for fully developed hourglass gauntlets or *Hentzen*, in spite of the significantly later stratigraphic relation (Figs. 1-3, 9; No. 13). Also their early form, which is kept flat and is provided

with rivets on the knuckle bosses, is often testified to by original examples. E.g., by the afore-mentioned first (out of three in total) find of gloves from the excavations at the Castle of Tannenberg (No. 4) (Fig. 12 A). Furthermore, by a possibly Italian specimen in Leeds (No. 5)<sup>113</sup>, by the armoured glove from the moated Castle of Mülenen (the find regrettably belongs to materials from old excavations, which were carried out in an uncontrolled manner) (No. 3)<sup>114</sup> and by a specimen with a long shaped cuff from the resources of the Castel Sant'Angelo in Rome (No. 68)<sup>115</sup>. One should especially refer to the glove which was found in 1994 in the deserted town of Alt-Weesen (No. 2)<sup>116</sup> and the one from the royal hall of Alsnö Hus, located to the north-west of Stockholm (No. 6)<sup>117</sup>. As opposed to the destruction horizon at Cucagna, which is to be dated between 1511 and 1522, these are dated in a more precise way to the actual period of spread of this defensive armament, as they are related to the capture of Alt-Weesen in 1386 (or its recapture and the related destruction in 1388) or the destruction of Alsnö Hus around 1390 (possibly by the Vitalians or *Vitalienbrüder*). Regrettably, no information on the find place or circumstances is available for comparative items, i.e., the already mentioned gauntlet or *Hentze* in the Germanisches Nationalmuseum in Nürnberg (dated to the 14<sup>th</sup> c.) (No. 8)<sup>118</sup> and the very well-preserved one in the Museo Nazionale del Bargello in Florence (No. 12)<sup>119</sup>, as well as the one in the Museo Stibbert (No. 67)<sup>120</sup>. A really narrow chronological

<sup>111</sup> At this occasion care is needed, as the cuff of the glove may have also been prepared separately and the grave stone perhaps originated later.

<sup>112</sup> Apart from stray finds. Preserved armoured gloves, possibly prepared long in the run-up for the burial or lying out of Prince of Wales (1330-1376; cf. Jones 1986), made of brass and with lining with some share of silk, are kept in the Cathedral of Canterbury, together with the tombstone, on which these are also depicted (cf. Post 1933, 46; Thordeman 1939, 235, Fig. 213). It was decided not to publish and discuss them in detail again, due to the material these are made of and their special function (it is these gloves and their phalanges' protection that usually serve as a model for reproductions).

<sup>113</sup> Royal Armouries Leeds, Inv. No. III.1713; Vesovera near Pavia, formerly collections of Luigi Marzoli and Claude Blair. I thank M. Goll for information about Inv. No., as this specimen is regrettably unavailable via the catalogue database of the Royal Armouries and no information was given in response to an enquiry.

<sup>114</sup> Before it came to systematic examinations preparing the area for development purposes (Bernese Oberland, Canton of Schwyz, today in the Schweizerisches Landesmuseum Zürich – see Krauskopf 2005, 82, 197, Pl. 29, Fig. 4; after Meyer 1970, E 9; Pl. 29:4).

<sup>115</sup> Museo Nazionale di Castel Sant'Angelo, Rome, Italy, Department of Armeria storica (cf. Terenzi 1967, No. 119) – companion volume to the exhibition in Poppi in Casentino (Arezzo)/Castello di Conti Guidi – ed. by M. Terenzi from the Museo Nazionale; regrettably, an enquiry concerning the provenance and Inv. No. remained unanswered. M. Goll referred to this specimen, and I thank him on heartiest for suggestions and friendly support. Within the framework of a project of *Interdisziplinäre Forschungen zur spätmittelalterlichen Plattnerkunst in Mitteleuropa zwischen 1350 und 1500* (*Interdisciplinary research on the late medieval armourers art in central Europe between 1350 and 1500*), he deals with analogous examinations. He supposes that No. 68/ Fig. 13 may be a replica, which cannot be excluded without technological examinations (it is, however, considerably improbable in light of a limited number of possible models for such a replica).

<sup>116</sup> St. Gallen, Linth Region (Schindler 2001, 24, Fig. 15; Frey 2009, 98f., footnote 39, Fig. 13).

<sup>117</sup> Hovgården, Adelsön/Mälaren, Sweden, today the Statens Historiska Museet Stockholm (Thordeman 1920, 58; 1939, 236, Fig. 216).

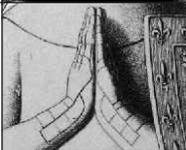
<sup>118</sup> Inv. No. W 1018 (cf. footnote 35); technological analysis; Fig. cf. Williams (2002, 357), dated to the end of the 14<sup>th</sup> c. Enquiries for information on acquisition and provenance, as well as for new image material, were not dealt with by the Germanisches Nationalmuseum.

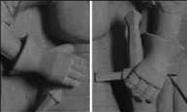
<sup>119</sup> North-Italian or Milanese manufacture, dated to c. 1380. Inv. No. MNB R. 13 (c. 15.0 x 13.0 cm, 195 g) – cf. Laking 1920b, 213; Rossi 1938, 63; Boccia, Coelho 1967, No. 121; Scalini 1984, 12, 19.

<sup>120</sup> Inv. No. 3551 in the Museo Stibbert in Florenz (Italia), Department Armeria europea – based on the acquisitions by a collector from the 2<sup>nd</sup> half of the 19<sup>th</sup> c. I thank Mr Riccardo Franci (ass. Curatore dell'Armeria) for information on this specimen.

No.	Buried person	Place	Chron.	Figure
24	Günther von Schwarzburg	Frankfurt am Main Germany	† 1349	
25	William Disney	St. Peter's church in Kingerby Great Britain	† 1360	
26	Robert du Bois	St. Andrew's church in Fersfield Great Britain	circa 1340	
27	Cangrande della Scala	Verona Italy	† 1330	
28	Albrecht von Hohenlohe-Möckmühl	Monastery church in Schöntal Germany	† 1338	
29	Berthold V. von Zähringen	Cathedral in Freiburg Germany	† 1218 circa 1350	
30	Lord Robert Bourchier	St. Andrew's and the Holy Trinity's church in Halstead Great Britain	† 1349	
31	Nicholas de Longford	St. Chad in Longford Great Britain	† 1350	
32	Rudolf IV. the Long Margrave of Baden	Lichtenthal Abbey in Baden-Baden Germany	† 1372	
33	Burkhard von Steinberg	Hildesheim Germany	† 1397	

No.	Buried person	Place	Chron.	Figure
34	Hugh de Audley	St. Bartholomew's in Much Marcle Great Britain	† 1336	
35	Roger de Kerdiston	St. Mary's church in Reepham Great Britain	† 1337	
36	William de Kerdiston	St. Mary's church in Reepham Great Britain	† 1361	
37	Albrecht II.	St. John's in Barby Germany	† 1350	
38	Reginald Cobham	St. Peter und Paul's church in Lingfield Great Britain	† 1361	
39	Johannes von Falkenstein	Arnsburg Monastery Germany	† 1365	
40	Richard de Willoughby	St. Mary's church and All Saints in Willoughby on the Wolds Great Britain	† 1369	
41	Konrad von Seinsheim	Schweinfurt Germany	† 1369	
42	Gottfried IV. von Cuyk-Arnsberg	Cologne Cathedral Germany	† 1371	
43	Edward of Woodstock or Plantagenet	Canterbury Cathedral Great Britain	† 1376	

No.	Buried person	Place	Date	Figure
44	Henry Fitzroger	St. Mary's church in Chewton Mendip Great Britain	† 1388 or 1350	
45	Prince Christopher of Denmark	Roskilde Cathedral Denmark	† 1363	
46	John of Eltham Plantagenet Earl of Cornwall	Westminster Abbey in London Great Britain	† 1336	
47	unknown	St. Mary of the Friars in Vendig Italy	?	
48	Walter Bopfinger	Bopfinger Germany	† 1349 /1359	
49	Walter von Hohenklingen	Feldbach Monastery Austria	† 1386	
50	Hermann von Everstein	Amelungsborn Abbey Germany	† 1350	
51	Heinrich Reich von Reichenstein	Cathedral in Basel Switzerland	† 1403	
52	Rudolf von Sachsenhausen	Frankfurt am Main Germany	† 1370	
53	Michael de la Pole Earl of Suffolk	Wingfield Great Britain	† 1415	

No.	Buried person	Place	Date	Figure
54	Burckhard von Massmünster	Cathedral in Basel Switzerland	† 1383	
55	Martin von Seinzheim	St. Mary's chapel in Würzburg Germany	† 1446	
56	Sir Thomas Arderne	Elford Great Britain	† 1391	
57	Ralph de Neville Earl of Westmorland	St. Mary's church in Staindrop Great Britain	† 1425	
58	William Philipp Lord Bardolf	St. Mary's church in Dennington Great Britain	ca. 1430	
59	Mastino II.	Castelvecchio in Verona Italy	† 1351	
60	Thomas de Vere	Earls Colne Great Britain	† 1371	
61	Bernabò Visconti	Castello Sforzesco in Milan Italy	† 1385	
62	Bolko II. the Small of Świdnica	Krzyszów Poland	† 1368	
63	Wildgraf Johann II. von Dhaun	St. Johannisberg's Collegiate church in Hochstetten-Dhaun Germany	after 1383	
64	Landgrave Ludwig II. von Thüringen	Rheinhardbrunn (today St. George's church) in Eisenach Germany	1st half of the 14th c. († 1172, after 1292)	
65	Antonio Rizzo or Rido di Padua	Chiesa di Santa Francesca Romana in Rome Italy	† 1450	

No.	Buried person	Place	Date	Figure
70	Bolko I. of Opole	St. Ann's chapel in the Franciscan church in Opole Poland	† 1313	
71	Bolko II. of Opole	St. Ann's chapel in the Franciscan church in Opole Poland	† 1356	

No.	Buried person	Place	Date	Figure
72	Henry II. the Pious	Franciscan Church of Sts. Vincent and St. Jacob in Wrocław Poland	† 1241	

Supplement to the fig. 17 (links to the depictions considered in the text).

Uzupełnienie do ryc. 17 (odnośniki źródłowe do przedstawień umieszczono w tekście).

reference is available for the hand defences of possibly Milanese weaponry manufacture belonging to Charles V (the Wise; 1364-1380) or the production for his son Charles VI (the Well-Beloved or the Mad; 1380-1422) from the Cathedral of Chartres (No. 10)<sup>121</sup>. Due to their size they are usually considered as special forms for an adolescent, analogously to the gloves of the alabaster sculpture for the grave of Christoffer in the Cathedral of Roskilde († 1363; 45)<sup>122</sup>. Only the gauntlets or *Hentzen* from Cucagna themselves hypothesise hands which would be very tiny according to present-day standards, which are not to be applied to the medieval physique.

It was stated that the similar shape of all the hourglass hand protectors was a result of an overall typological development. An almost identical paw-like shaping of the knuckle-part can be found not only in the case of these. It can be also observed in the multi-part variants of hand protections. It can be clearly seen in the case of the gloves of John Plantagenet Earl of Cornwall in Westminster Abbey in London († 1336; No. 46), the variants on a tombstone in St Michael Chapel in the Church of St. Maria degli Frari in Venice (No. 47)<sup>123</sup>, as well as the intricately elaborated hand defences of squire Christoffer and, e.g., Glove 3 from Visby, which was used analogously to these (Thordeman

1939, 423-426 Figs. 413-416). With these examples, the variety of different hand protectors is already covered to a fairly great degree.

Further modifications can be seen in details. Early evidenced and nevertheless constantly transmitted forms or depictions feature flat formed plates<sup>124</sup>, while further functional developments of back plates of gauntlets or *Hentzen* and plate gloves towards plastical reinforcement with an equal amount of used materials can be encountered already in the mid-14<sup>th</sup> c. In an extreme shaping, they can be found, e.g., on the grave of Walter Bopfing in Bopfingen († 1349/1359; No. 48) and in a similar form also on the grave of Walter von Hohenklingen in the monastery of Feldbach († 1386; No. 49). Being shaped in a considerably flatter way, they became established in the 2<sup>nd</sup> half of the 14<sup>th</sup> c., with the structuring and composition of knuckles in separate elaborations, which reproduce the course of tendons (Type A<sup>125</sup>)<sup>126</sup>. In this way, the defence received the afore-mentioned characteristic paw-like shape. In this case, the rounded finger bases and formations of the back of the hand with convex arches, as in the examples (Type B) from Alsnö Hus, in the right gauntlet or *Hentze* from the Cathedral of Ripon (No. 7)<sup>127</sup> and in the Lesser Poland's find from the Castle of Czychów (No. 73)<sup>128</sup>, enable one to identify

<sup>121</sup> Musée des Beaux-Arts of Chartres (cf. Cripps-Day 1942).

<sup>122</sup> Prince of Denmark and the son of the Danish King Waldemar Atterdag (1340-1375), who was victorious at Visby. In spite of his young age, he was very experienced in battle (i.a., at Visby).

<sup>123</sup> Gravestone with a recumbent figure, mid-14<sup>th</sup> c. (with neither inscription nor reference to a person). One of the gloves of the hands being put together in the praying gesture has already been reproduced as a drawing by Thordeman (1939, 242, Fig. 230).

<sup>124</sup> As examples, the depictions of armed tomb guards from the Holy Sepulchre in the southern side of the long house in the Minster Cathedral in Freiburg from the 1340s can be given here (Thordeman 1939, 237-239; Frey 2009, 96).

<sup>125</sup> An identification of individual types within a relatively small group of finds of hourglass gauntlets or *Hentzen* made of one plate is obviously difficult, especially as mixed forms and special items with lavish ornament obliterate borders between individual types. The attempt which is proposed here should be considered as experiment for extended acquisition of information (see below, as well as Fig. 18).

<sup>126</sup> As in the case of the gauntlet or *Hentze* from Palazzo III A from Cucagna. A similar dating is seen by J. Frey in comparison with the bosses of the central hand plates in the Visby materials. As an exception of isolated earlier use, after Thordeman (1939, 303 Fig. 307), the tombstone of Albrecht von Hohenlohe-Möckmühl († 1338) is pointed out (Frey 2009, 97, footnote 28).

<sup>127</sup> North Yorkshire, (Great Britain). Comparable with the gloves of Hermann von Everstein in the Abbey of Amelungsborn († 1350; No. 50) (cf. Gilyard-Beer 1941, 27-35 – embedding in the material known at that time in the same place: Mann 1941; 1942, 113-122).

<sup>128</sup> Including finds of defences of phalanges. End of the 14<sup>th</sup> c. (cf. Szipunar, Glinianowicz 2006, 139f., Fig. 6; Marek 2008, 101).

other aesthetic preferences than more geometric forms (completely apart from the spatial distribution, see below). Workshops or forms of regional provenance also differ – these can be encountered in parallel, as it can be seen on the left hand defence from Ripon (No. 11, cf. Fig. 13)<sup>129</sup>. This one exhibits three sharply separated flutes towards the division of the back of the hand. Their almost parallel track also returns on another item from the Castle of Tannenberg, which is now in the Metropolitan Museum in New York (No. 9; Fig. 12:B)<sup>130</sup> and on the pair from Chartres (No. 10)<sup>131</sup>. These flutes start on the clearly separated angular bends over the knuckles of the metacarpi to the proximal phalanges, which can also be clearly seen on the Nürnberg specimen and the gauntlets or *Hentzen* of an Italian set of armour in the Metropolitan Museum (without No.)<sup>132</sup>. They go up to the wrist. The examples from Palazzo III A from Cucagna, individual items in the Museo Nazionale del Bargello (No. 12) and the Museo Stibbert (No. 67), as well as the gloves of Ulrich IV von Matsch at the Castle of Churburg near Schulderns in Tirol (No. 15)<sup>133</sup> combine these flutes in the style of the anatomical pattern up to the wrist.

Alongside with the gloves in the Museo Nazionale del Bargello in Florence (No. 16), which also belonged to Ulrich IV and are dated to 1361, analogously to the material from Visby, the pairs from the Churburg armoury and the Wallace Collection in London (No. 14)<sup>134</sup> represent a qualitative and hierarchical optimum among

preserved specimens. Shaping of the back, fluted metal sheets around the cuff, the wrist band and the composition of the finger bases with decorative plates suggest the provenance from the same Milanese workshop, in spite of differences concerning details and their engravings. Banners on the cuff edge of the pair of gauntlets or *Hentzen* in Florence and London are peculiar, and there are hardly any known archaeological analogies from Friuli to these. It was situated, as mentioned, at the Castle of Soffumbergo (Soumbech/Scharfenberg), which is located not far from Cucagna and also belonged to the Commune of Faedis, apart from further parts of weapons<sup>135</sup>. Moreover, two once gilded fragments of bronze sheets of such a banner can be related to the left-hand specimen, comparatively simply formed at first sight (No. 17; Fig. 14); putatively, through the extant congruent rivet holes on the cuff edge, which is at present considerably completed in the course of conservation. Analogously to comparative specimens preserved in museums, a verse from the Gospel according to Luke (Luke 4, 30) was chosen as the legend. It was still in use among mercenary soldiers in the 16<sup>th</sup> and the 17<sup>th</sup> c. as an apotropaic-magical dictum and prayer formula, in order to secure invulnerability<sup>136</sup>.

The comparative examples of single-piece hand defences and the new finds from Cucagna represent the interim peak point of a qualitative typology, independently of chronological considerations. Not least, they can be therefore found on contemporary depictions of the knight archetype, i.e., St George<sup>137</sup>, and various other

<sup>129</sup> Associated with the weapons of Thomas de Markenfield and traditionally dated to between 1400 and 1420. Both specimens possibly come from the collection of Sir Edward Blackett II (1649-1718; cf. Hanna 2008, 174, footnote 35).

<sup>130</sup> Inv. No. 29.150.108 (cf. Leenen et al. 2010, 135, 137f., Fig. 9). Also at this point I have to thank Mr. M. Goll very much for the supply of the picture rights of the photos in Fig. 12 B. In one about two-and-a-half-year correspondence with the Assistant Curator at the Department of Arms and Armor of Metropolitan Museum the possibility to show pictures of the object was promised several times and repeats the transmission of photos from the museum. An official, central picture inquiry at the picture service of the Metropolitan Museum was given a positive response, however, the manufacture and transmission of the pictures did not occur. I regret this and am glad all the more that Mr. M. Goll allowed uncomplicated to use his pictures of the Tannenberg-find.

<sup>131</sup> It can also be well identified on the grave of Heinrich Reich von Reichenstein in the Minster Cathedral in Basel († 1403; No. 51) (see below).

<sup>132</sup> Inv. No. 29.154.3 (Bashford Dean Memorial Collection, Metropolitan Museum in New York; donation of Helen Fahnestock Hubbard 1929; possibly original items, in which only the ornamental brass straps were completed – the cuff form, however, renders it possible to assume an entire replica).

<sup>133</sup> Integrated within his set of armour CH S12/S13 (cf. Scalini et al. 1995, 225, 253; Trapp, Mann 1995, Fig. 13; Williams 2002, 69f.; with marks of the Master P, IO and others).

<sup>134</sup> Inv. No. A.251/2; 1360-1380 (Williams 2002, 158).

<sup>135</sup> The rubble horizons, from which the find comes, rather belong to the destruction by the burghers of Cividale in 1420 than to the siege and capture by Nicolas of Luxemburg in 1352. In the 2<sup>nd</sup> half of the 14<sup>th</sup> c., Patriarchs Ludovicus I de la Torre and Johannes of Moravia resided there (cf. Grönwald 2005, 155-158).

<sup>136</sup> Preserved: ... IESUSAUTEM / TRANSIE ..., according to the pair MNB R. 12 in Florence (16), it is to be completed as: IESUSAUTEMITEMTRANSIENS PERMEDIUMILLORUMIBEAT [IESUSAUT(EM)] (cf. Boccia 1994; Gremese 2000, 84; after Scalini 1984, 9, 19) – *But Jesus, passing through the midst of them, went His way* (after He had been rejected in His homeland and being in the highest danger; under Edward III (1327-1377) and still under Henry VII (1485-1509), it was used as circumscription on English coins). About “securing” or the so-called Passau art and the protection against enemies cf. Funke (2009, 19f., 25).

<sup>137</sup> E.g., in the Musée des Beaux-Arts in Dijon, on the statue in Basel (1372) or an ivory miniature in the Museo Nazionale del Bargello in Florence (Inv. No. 125 C).

examples<sup>138</sup>. From it, different variants expanded in the early 15<sup>th</sup> c. An hourglass protector, dated to c. 1380, from the Castle of Ørum (Midtjylland, Denmark; No. 18)<sup>139</sup>, perhaps with its parallel on the tombstone of the Imperial Procurator Rudolf von Sachsenhausen in Frankfurt am Main († 1370; No. 52), already mark the end of development of single-piece hand defences. Between the finger protector and the articulated back of the hand, a plate is added, which is articulated accordingly to the knuckles and which is movably fixed on the plate of the back of the hand. The wrought metal ring around the indent of the wrist is still present only as a typological vestige, being worked in the metal plate<sup>140</sup> – it is shaped in an incomparably simpler way than in the case of the parade specimens from the Churburg collection (with pyramidal cones between pearls and reels), in Florence (with rectangular decoration) and in the Wallace Collection in London (with twisted ornament)<sup>141</sup>.

Models made of numerous plates, as shown on the wooden sculpture of the grave of Michael de la Pole, Earl of Suffolk, in the church of Wingfield in Suffolk († 1415; No. 53) remained, on the one hand, in an almost unchanged form. However, different preferences can be seen in Central and Western Europe in the 15<sup>th</sup> c. Apart from possible links in the development, for example, the hourglass mitten from the collection of the Castle of Kreuzenstein near Leobendorf, which is completed with two once telescoped plates which undividedly reproduce the articulation of the

fingers (A; No. 21) (cf. Post 1933, 46, Fig. 4a-b; already discussed by Laking 1920b, 209 ff.)<sup>142</sup>, numerous ideas emerged in Central Europe. If especially rigid defences were not necessary, as in *Gestech* (peaceful joust with blunted lances) or *Tjost*, or a *Rennen*<sup>143</sup> (warlike joust with pointed lances), one constructed armoured gloves of elite circles<sup>144</sup> for the sporty use in a more movable manner<sup>145</sup>. In their new composition of small elements, they required constructive-mechanical armourer's craft that would be qualitatively better and almost conceptualising. In this case, the pragmatic designs of the 14<sup>th</sup> c. get lost<sup>146</sup>. Fingered "true" (late) Gothic armoured or plate gloves with telescoped finger protectors of the 2<sup>nd</sup> half of the 15<sup>th</sup> and the 16<sup>th</sup> c. developed as artisanal peak points. On the other hand, after single-piece gauntlets or *Hentzen* with longer stretched cuffs, which reached beyond the riveting of the lining (originally situated on the edge), as it can be seen on the third specimen from Tannenberg (preserved in the Hessisches Landesmuseum in Darmstadt, No. 19; Fig. 12:C)<sup>147</sup> and the one from the Heinrichenburg (No. 20; regrettably, preserved without the knuckle part)<sup>148</sup>, crudely appearing purely functional gauntlets or *Hentzen* originated. Their knuckle parts are angular and they abandon the profiling of the back of the hand, as their plates more and more overlap the fingers<sup>149</sup>. These probably emerged from a mass serial manufacture of specialised workshops in the urban milieu, as in the case of a long-cuffed armoured glove from Haus Herbede in Witten (No. 23), which

<sup>138</sup> Very precisely, e.g., in the case of a combatant in the scene of the Arrest of Christ on an altar from the late 14<sup>th</sup> c. in the Isabella Steward Gardner Museum Boston, Massachusetts, but also in minor (mobiliary) art, e.g., on a knife hilt plate in the Museo Nazionale del Bargello in Florenz (Inv. No. 147 C), or on bronze aquamanilia.

<sup>139</sup> The Thisted Museum or the Museet for Thy og Vester Hanherred, Thisted/Thy am Limfjord (cf. Thordeman 1939, 237, Fig. 217).

<sup>140</sup> The plate protecting the back of the hand which belongs to fragments of a plate glove from the Castle of Küssnach (Switzerland) demonstrates an ornamented bulge. In this case, analogously to the rivet row on the item from Kugelsburg, it may also be such a vestige (cf. *ibidem*, 232 ff., Figs. 209, 211).

<sup>141</sup> Dated to c. 1360-1380; Inv. No. A.251/2 (cf. Williams 2002, 158).

<sup>142</sup> The finger parts, however, need not be originals, which could be said only via direct examination of the specimen (it cannot be excluded, either, that the entire specimen is a replica). Such telescoped finger plates were until now dated to not before 1400, and actually only since 1450.

<sup>143</sup> Briefly summarised on the basis of the example of finds from Haus Herbede (Peine et al., 1998, 220; see also Baumeister 2010).

<sup>144</sup> Based on survived specimens in museums which can be related to individual persons. Otherwise, for the period before c. 1460 it is naturally difficult to state whether a part of armour exclusively served for field or tournament use.

<sup>145</sup> Hourglass types already fulfilled these requirements. Thus, on the depiction of the armour polisher Hans Derrer from 1469 in the first volume of the house books of the Mendel family's *Zwölfbrüderstiftung* (*Twelve Brothers Foundation*), a glove of that kind (perhaps movable in the wrist) can be seen in a "traditional" form (perhaps it is to be polished). It is shown with essentially "more modern" weapons for a *Gestech* (Stadtbibliothek Nürnberg, Amb. 317.2° Folio 87°).

<sup>146</sup> It can be traced on almost all kinds of armour (on this cf. Gamber 1953, 58), although only brigantines survived.

<sup>147</sup> Contrary to suppositions also based on the item in the Metropolitan Museum, that it got lost in the meantime (cf. Schmitt 2008, 166 – following Thordeman, he still assumed two instead of three finds), it is splendidly preserved under Inv. No. W 69: 7 (length 18.6, breadth 13, height 11.1 cm (thumb height). I thank the employees of the Department of Arts and Crafts – the curator Mr Wolfgang Glüber, the conservator Angelika Wassak and Wolfgang Fuhrmannek for their friendly support and supply of information and pictorial material.

<sup>148</sup> Cf. footnote 32.

<sup>149</sup> For the time being, however, the fingers are still individually protected with small plates or chain mail.

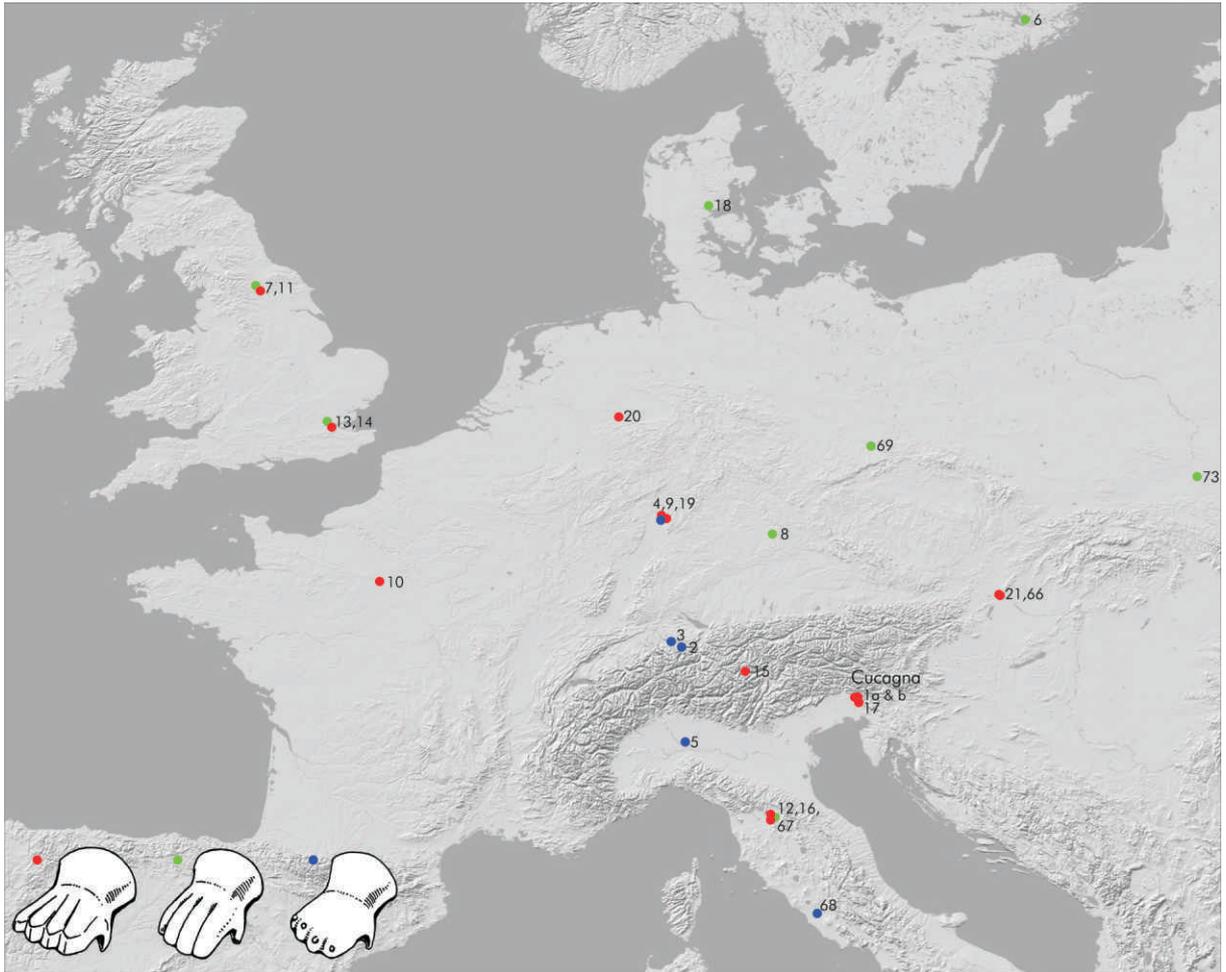


Fig. 18. Hourglass gauntlets. Locations of the finds, original specimens in museum collections and selection of depictions from a tomb slabs: ● – *Hentzen* with paws-shaped creation of back of the hand and ankle; ● – *Hentzen* with a back of the hand from convex curves; ● – *Hentzen* without specific arrangement of the back of the hand, with rivets on the humps of the hand ankles. Drawing by H. Grönwald.

Ryc. 18. Rękawice klepsydrowe. Lokalizacja znalezisk, oryginalne zabytki w kolekcjach muzealnych i wybór przedstawień na nagrobkach: ● – rękawice uformowane na kształt łapy zwierzęcej; ● – rękawice, których wierzch dłoni ukształtowany jest przez wypukłe łuki; ● – rękawice z nitami wzdłuż grzbietu nadgarstka. Rys. H. Grönwald.

already became part of the finding in the 1<sup>st</sup> half of the 15<sup>th</sup> c.<sup>150</sup> In this case, cuffs which were shaped in a narrower manner on the side of the pulse were not closed any more throughout their entire length. Such gauntlets or *Hentzen*, which are very precisely shown as products in the depictions of craftsmen or armourers and armour polishers of the Mendel family's *Zwölfbrüderstiftung*<sup>151</sup> and which are hardly relevant here as comparative specimens, were not only in steady use (Fig. 15). While their

form is perhaps still related to the examples on the grave of Burckhard von Massmünster in the Minster Cathedral of Basel († 1383; No. 54) or to the gauntlets or *Hentzen* on the epitaph of Wildgrave Johann II von Dhaun in the monastic church of St. Johannisberg in Hochstetten-Dhaun (after 1383; No. 63), they also appear later in a prominent place, e.g., on the tomb of Martin von Seinzheim in the Holy Virgin Chapel (*Marienkappelle*) in Würzburg († 1446; No. 55), or in the case of the

<sup>150</sup> Central Ruhr Valley, Ennepe-Ruhr District. From the excavations led by Gabriele Isenberg in 1985-1989/91 – cf. Peine et al., 1998, 219f.; Peine 2004, 40-77; [http://www.lwl.org/pressemitteilungen/mitteilung.php?urlIDAlt=1034849406\\_0](http://www.lwl.org/pressemitteilungen/mitteilung.php?urlIDAlt=1034849406_0) from 17 October 2002. I thank the LWL-Museum für Archäologie in Herne and Brunhilde Leenen for supply of pictorial material concerning the armoured glove (Inv. No. M 1731; © Stefan Brentführer).

<sup>151</sup> Volume 1 of the house books; Stadtbibliothek Nürnberg, Amb. 317.2°; Folio 7<sup>v</sup> (polisher Georg; before 1414), Folio 17<sup>r</sup> (armour polisher Bernhard Polyrrer; 1414), Folio 42<sup>r</sup> (armourer Bernhard Platner; before 1423), Folio 101<sup>v</sup> (armour polisher Hans Pernecker; before 1483).

depiction of a tomb guard on the altar of Isenheim by Matthias Grünewald (1515)<sup>152</sup>. Throughout the 15<sup>th</sup> c. and thereafter, the joining of several plates with movable friction and first of all floating rivets spread. These were placed in pairs around a rotation axis and – analogously to the single-piece gauntlets or *Hentzen* in the Kreuzenstein example (No. 21) – allowed for comparably stable defences<sup>153</sup>. A model of that kind is to be found with further corresponding plates at the Schauenburg near Dossenheim (No. 22), which was destroyed in 1460 by the troops of Palatine Friedrich der Siegreiche (the Victorious), together with the neighbouring Castle of Handschuhsheim<sup>154</sup>. Typologically, it is followed by specimens which are better adjusted anatomically, with long stretched cuffs and multiple-telescoped finger protectors<sup>155</sup>.

In Western Europe, by contrast, one can demonstrate the continuing tradition of single-piece gauntlets or *Hentzen*, which fully developed in the 3<sup>rd</sup> quarter of the 14<sup>th</sup> c. Merely with the optical examination, a separate way seems to emerge. Thus, richly ornamented metal bands enclose the cuff edge and ribs of the back of the hand appear in a lozenge pattern shaping, as it can be seen on the graves of Sir Thomas Arderne in the church of Elford in Staffordshire († 1391; No. 56), of Ralph de Neville, Earl of Westmorland in the Staindrop Church of Durham († 1425; No. 57), or of William Philipp Lord Bardolf in St Mary Church in Dennington in Suffolk (c. 1430; No. 58). It was perhaps a fashion of the years of reign of Henry IV and Henry V, which spread in England and France. If one gets an overview of preserved types of defences, yet another differentiation stands out, which can partially be itemised in a spatial way. The quantity of finds is too small for a possible chronological arrangement – it indicates itself at most. Based on the new finds from Cucagna, the focus of description was on gauntlets or *Hentzen*

with a paw-like designed part protecting the roots of the fingers. It marked a zigzag line (Type A). Apart from armoured gloves without particular structuring of the back<sup>156</sup> (Type C), first of all other ones differ from it. In their case, the back part is made of four convex arches situated at one another (Type B). Except for a supposition that various manufacturing centres are responsible for this different shaping, there is no conclusive explanation of this phenomenon, which at least can be still seen in the case of “fold bundle gloves” of the last quarter of the 15<sup>th</sup> c. With regard to that, a look on the distribution is informative, as it indicates a preferred use of Type C in Northern and North-Eastern Europe (Fig. 18). The southern distribution of Type C can arise from the close affinity to widespread gauntlets or *Hentzen* with paw-like parts protecting the roots of the fingers. These perhaps developed from it and were technologically enhanced by the mentioned movable splint, which functioned as a holder of the phalanges.

The traditional image of a stringent evolution of variably used fingered gloves with various protective elements up to the spread of single-piece gauntlets or *Hentzen* has already been considerably weakened with the hitherto remarks. Still, the time frame in which the forms which are represented at Cucagna developed and were used is definable. However, what triggered their development and how did the form remain unchanged for long since the mid-14<sup>th</sup> c. and was transmitted beyond the early 15<sup>th</sup> c., even with a short cuff? As an answer, apart from form derivation, a special chivalrous way of combat will readily be referred to (Fig. 16). It required efficient defences of hands, which were especially exposed to direct strikes of the adversary and to the danger of contusion. Apart from standard armament of combatants (knights as well as mercenaries) armed with one-handed weapons and shields, pairs of single-piece massive

<sup>152</sup> Colmar, Musée d’Unterlinden.

<sup>153</sup> However, they did not first develop in the 15<sup>th</sup> c. in Italy, as sometimes assumed. In the case of single-piece forms of gloves of the 2<sup>nd</sup> half of the 14<sup>th</sup> c., such as the specimen from Palazzo III A from Cucagna, there are exclusively “simple” (friction) rivets, rotary only around their axes, as it can be seen on the only slightly movable bridge which served for fastening of the finger defences.

<sup>154</sup> Rhein-Neckar District. Cf. the find publication by Post (1933, 165, Figs. 1-3 – session reports; whereabouts of the item are unknown). A knuckle splint, lavishly beset with rivets, is to be excluded from considerations, as it is to be attributed to another strap or plate glove. First excavations at the Castle of Schauenburg took place in 1902 under the direction of Karl Pfaff, in 1931 by the Gemeinnütziger Verein or the Heimatverein Dossenheim and from 1932 under the direction of Ludwig Schmieder (1884-1939), on behalf of the Badisches Bezirksbauamt Heidelberg and were continued with the involvement of the Reichsarbeitsdienst. In their course, the glove was found (development related excavations in 1994). I thank Mr Christian Burkhart in Dossenheim for providing me with reproductions of three glass plate negatives, which he found in 1995 in the Archiv des Heidelberger Schloss (today in the Generallandesarchiv Karlsruhe des Landesarchiv Baden-Württemberg; Acc. No. GLA 424 e Zugang 1998-40 F from HD).

<sup>155</sup> E.g., the broadly shaped right gauntlet or *Hentze* made of three plates in the Deutsches Historisches Museum Berlin: cat. No. 36, Inv. W. 976, PC 14528 (perhaps Italian, c. 1450-1460); length 32 cm, width 13.5 cm, weight: 1100 g.

<sup>156</sup> Usually with rivets on the knobs of the hand knuckles, which held the leather straps for phalanges – this type of gauntlets or *Hentzen* was not yet provided with a corresponding splint or bridge, as in the case of the gauntlet from Cucagna/Palazzo IV B.

defences could guard against the force impact in case the sword (not necessarily a “two-handed sword”) was led with both hands. However, sets or pairs survived only in few cases in museums and these are related to specific persons. Finds of right-side hand defences, as from Cucagna, were most probably not owned by pedants, as the protection of the right striking arm was sufficient and one spared financial expenses for a second item.

While multi-part models made of riveted plates had longer cuffs, partially integrated into the lower arm splinter<sup>157</sup>, short and broad cuffs of the hourglass gauntlets or *Hentzen* hardly overlapped the vambrace<sup>158</sup>. Widely exposed, this funnel-shaped form not only offered freedom of movement for the wrist, but it also diverted strikes that were delivered against the arms, as well as frontally delivered thrusts. This is illustrated by the cuffs preserved on the equestrian statue of Mastino II of the Scaliger family in the Castelvecchio from Verona († 1351; No. 59). Not least, it is impressively demonstrated by damages on survived original items<sup>159</sup>. In this way, these hand defences document the degree of specialisation of contemporary fighting technique, which required different equipment for individual combat on foot and on horseback than in the case of a mass of urban burgher or mercenary troops, as they were maintained, e.g., by the Patriarchs of Aquileia<sup>160</sup>. Their tactical warfare envisaged to hold the adversary at distance with extra-long lances (staff-weapons). Is it manifested here, apart from representations on tombs of the nobility who underlined their *podestas* with reinforcement of weapons, that the bearers of these defensive arms held a high-status position within the “warrior caste”? The sculptures which

correspond to the chronological framework of the association of finds of the gauntlets or *Hentzen* from Cucagna from Palazzo IV support this impression and evidence their transmission as preferred equipment in high-status chivalrous environment<sup>161</sup>. Actual exclusiveness becomes clear, apart from numerous Central and Western European proofs, when one realises that epitaphs and tombstones of Silesian Piasts<sup>162</sup> in the late 14<sup>th</sup> c. were preferredly provided with hourglass gauntlets or *Hentzen*<sup>163</sup>. While the depictions of gauntlets or *Hentzen* in the case of the aforementioned tomb of Bolko II the Small († 1368; No. 62) in Krzeszów may be assessed as an almost contemporary equipment, the same can by no means be said in the case of the epitaph of Henryk II the Pious († 9 April 1241<sup>164</sup>; No. 72) in Wrocław<sup>165</sup>. The sculpture – analogously to the special case of the double grave of Bolko I of Opole († 1313; No. 70) and Bolko II of Opole († 1356; No. 71)<sup>166</sup> – was founded later on, within the framework of statuary consolidation of the dynasty. Bolko III had the latter double grave made between 1380 and 1382. In this case, it is noteworthy that for the representatives of two generations, different types of hourglass gauntlets or *Hentzen* were selected, one with the back of the hand being formed of convex arches, and the other with paw-like shaping of the back of the hand. While preserved original specimens of both kinds were evidently used in parallel through time, a contemporary chronological and fashion assessment seems to be tangible here.

In spite of differences in details, the generally similar design of the defensive arms discussed here raises the questions of where the hourglass hand defences originated from and how they were

<sup>157</sup> Survived in the graves of Visby.

<sup>158</sup> As a typical combination in that period for protecting the lower arms, closed steel sheets that were shaped into cannons can be assumed. These replaced chain mail arm-pieces or segmented arm splints.

<sup>159</sup> Cf. the deformed cuffs of the finds from Alt-Weesen (No. 3) and from Cucagna from Palazzo IV B (No. 2).

<sup>160</sup> I. a. via material and personal services imposed on the rural aristocracy (*talea militiae*): after the partial destruction of Cucagna in 1310 by the troops of Ottobono de' Razzi (1302-1315; especially dealt with in the *Chronicon Spilimbergense*; cf. D'Angelo 1998; Ludwig 2009, 114), e.g., the family which was bound with oath of allegiance after the punitive action due to unauthorised building activity, from 1310 had to send six armed and mounted combatants and two crossbowmen. Until 1327, the requirements increased to 16 combatants and four crossbowmen – it did not mirror the economic prosperity, but a limitation of possibilities due to this burden. After the family had withdrawn from the Patriarch in the meantime, in 1376 only eight combatants and four crossbowmen could be sent (according to the *Cronaca di Valvasone*; cf. Corbanese 1984, 363-367; in excerpts: Ludwig 2009, 144).

<sup>161</sup> Gloves of this kind with finger protectors are worn by mounted combatants, e.g., on the depiction of the fall and conversion of Paul the Apostle on the so-called Bohemian Alter of Magister Nicolaus tabernaculi in the Cathedral in Brandenburg (1375; right wing of the predella).

<sup>162</sup> The oldest of the four descendant lines of the Polish ruling dynasty of the Piasts, whose realm of rule since 1348 mostly did not belong to the territory of the Polish state, but to Bohemia and the Holy Roman Empire. With the death of Bolko II Mały (the Small) († 28 July 1368; No. 62), also Świdnica fell to the Empire as the last Silesian duchy.

<sup>163</sup> At the same time, this concerns the easternmost distribution of this type of monument, concentrated within a small territory (cf. Fig. 17).

<sup>164</sup> Fallen in the battle of Dobro Pole near Legnica against the Mongols.

<sup>165</sup> Now in The National Museum in Wrocław (until 1530 St Jacob's Church), Poland.

<sup>166</sup> In St Anne (or Piast) Chapel of the Franciscan church in Opole, Poland.

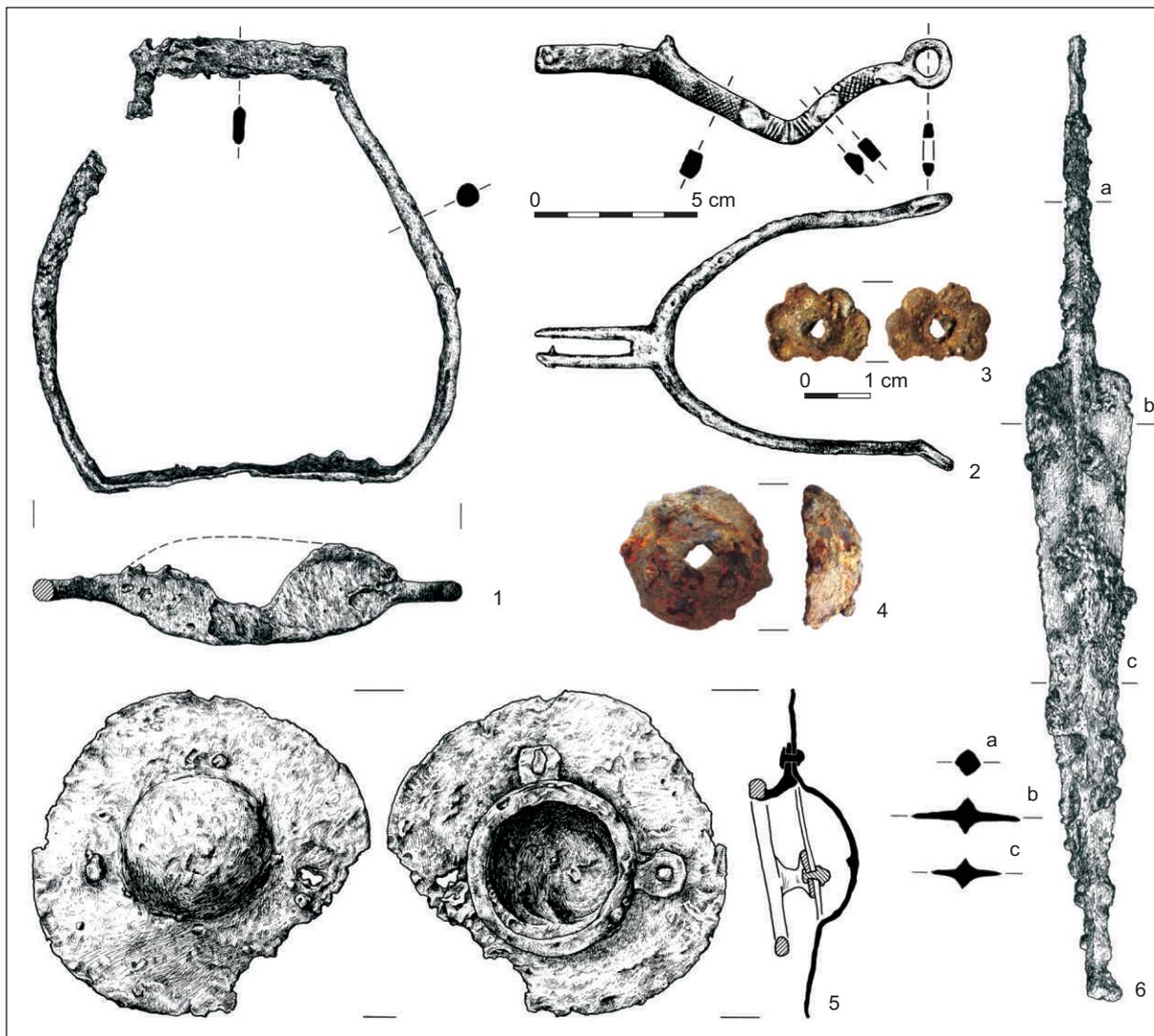


Fig. 19. Castello di Cucagna, Faedis, Italy. Materials from the excavation of the castle: 1 – stirrup, No. 2007/050; 2 – spur, No. 2009/260; 3 – fittingbelt, No. 2003/296; 4 – hemispheric plate with hole, perhaps cover of the pommel of sword, No. 2001/173f; 5 – strap distributor (horse-equipment), No. 2008/149; 6 – dagger, No. 2007/047. *Drawing and photo by H. Grönwald.*

Ryc. 19. Castello di Cucagna, gm. Faedis, Włochy. Materiał zabytkowy z badań na zamku: 1 – strzemię, nr inw. 2007/050; 2 – ostroga, nr inw. 2009/260; 3 – okucie pasa, nr inw. 2003/296; 4 – półkulista płytką, być może głowica miecza, nr inw. 2001/173f; 5 – rozdzielacz, nr inw. 2008/149; 6 – pugiinał, nr inw. 2007/047. *Rys. i fot. H. Grönwald.*

obtained. There have been almost no metallurgical examinations and as to the items from Cucagna, no such examinations have been even possible so far<sup>167</sup>. It is possible to summarise the key points only of the production of semi-finished products and of forming – the observations which are not to be ignored while comparing the objects and determining the workshops: as the starting material, the traded semi-finished items underwent

special manufacturing processes which apart from appropriate smiths required other craftsmen than armourers who formed the work pieces later<sup>168</sup>. The material, partly or sufficiently freed from impurities, was passed to be processed into various forms of semi-finished items. It should be assumed that since at least the 14<sup>th</sup> c., the evenly thin, flat plates which the armourers needed to make such work pieces as gloves went again through an intermediate stage

<sup>167</sup> It is also impossible to say anything about the origin and the primary smelting of ore.

<sup>168</sup> The scanty statements about it are based on descriptions of the operation by Mr M. Goll, which were supplemented and expanded with technological details. The process of forging homogeneous, thick material out of the iron bloom and of removing coal and slag contaminations cannot be discussed in detail. Already in the first forging process, the elasticity of the material was enhanced by occasional folding and welding of the material through development of layer-like structure.

of processing at specialised workshops<sup>169</sup>. Certainly, armourers could produce smaller plates on their own – the steps of the procedure have remained mostly unchanged till the present day (although supplanted by rolling technology)<sup>170</sup> and, in principle, including further heat treatment technologies, and have been known since the ancient times. The pieces of iron, crosscut and widened at the ends, were bent at the middle, and the pieces lying on top of each other were widened further. Soaked in a clayey liquid (at the beginning of the 19<sup>th</sup> c., known to some extent as “cock’s broth” or *Hahnenbrei*), the surfaces lying on each other remained not welded. Therefore, it was possible to place a number of semi-finished items on one another and widen them further as a package (occasionally rearranged) – the plate thickness and surfaces were thus adjusted to one another, which demanded some practice and experience<sup>171</sup>. When the desired plate thickness of 1 mm was achieved, the packages were disassembled and the folds were separated<sup>172</sup> – from one splint two plates were made. The trimming of the edges and fine smoothing through hammering ended the process<sup>173</sup>. In order to enhance the quality of steel, above all to harden the material, heat treatment changing the microcrystalline structure could conceivably be applied, although generalising statements are hardly possible as there are only few objects of analysis from before 1400<sup>174</sup>. In

view of the lack of knowledge of the contemporary steel quality and heat treatment, it is to be hoped that it will be possible to study metal finds from Cucagna systematically in the future, as each discovered item of armour is an interesting source for explaining the origin and describing the technology<sup>175</sup>. The hardening of the surfaces in order to enhance the resistance to the force impact could be achieved by means of accelerated cooling of the forged work pieces, glowing from red to yellow, containing from 0.2% to 0.8% of carbon in the iron base material or steel<sup>176</sup>. Two ways are possible. The first one is quenching in cold liquids (water/ice-cold water), which embrittles the material (due to the formation of martensite in the hardened structure of steel), followed by longer tempering at about 250°C in order to make the plate resistant to fractures. The alternative way consists in delayed cooling of the work piece from the state of glowing, for example, in a heated lead bath in hot water, in oil baths or by means of air supply. Given that flexibility was achieved, tempering is unnecessary<sup>177</sup>. Already in the case of the early plate gloves consisting of small parts, it can be assumed that they were sometimes acquired south of the Alps<sup>178</sup>, where workshops were accordingly able to master these steel processing technologies in detail. Smith’s marks<sup>179</sup> and direct affinity of the group of gauntlets or

<sup>169</sup> Water driven plate hammers, which were perhaps used in the process, are documented in contemporary written sources, but there is lack of evidence of deliveries of material to armouring workshops for the 14<sup>th</sup> c.

<sup>170</sup> For ethnographic description of the practical operation cf. e. g. Grönwald, Jeute, Krauss (2000, 40, 42f).

<sup>171</sup> Within the framework of the mentioned project by M. Goll (cf. footnote 115), numerous preserved parts of plate armour were taken into account, although only some of them were measured and the rest was included without measure. It is possible to determine accordingly a range of plate thickness between 0.7 and 1.2 mm for armoured gloves and the base material was certainly slightly thicker and lost again about 0.2 – 0.5 mm during grinding and polishing. The plate thickness seems small but it should be noted that in the case of quality of material comparable with knife steel, there are remarkable protection properties.

<sup>172</sup> With metal shears or a using a splitting wedge with a wide cutting edge.

<sup>173</sup> More details about black plate manufacturing see in Karsten (1816, 601ff.).

<sup>174</sup> Even in the extensive studies by A. Williams, only four parts of armour from before 1400 were available. Anyway, the employment of heat treatment technology could be proved, e.g. in the case of the breastplate W195 in the Bayerisches Nationalmuseum in München – with a hardness of 374HV, the earliest known item so far of a part of armour hardened in a controlled manner (around 1395; cf. Williams 2002, 62).

<sup>175</sup> Moreover, such ways of data acquisition are necessary to assess the museum material, even to be able to exclude replicas. However, they have not been non-destructive so far and have been relatively uncertain in the result (cf. id., 2002, 19-28). One can only hope for future non-destructive methods (like micro-computer tomography applied only at random in the case of historical metal artefacts (cf. Kastner, Salaberger, Grabner 2007, 60-65).

<sup>176</sup> For hypoeutectoid steel, the austenitisation temperature >850°C (less than 0.8 % C) (depending on the alloy, 50-100°C above the Ac<sub>1</sub>-limit so that the carbon is solved already in the austenite – the main part of the structure of cubic face-centred solid solution in iron alloys; for iron-based materials, around >723°C); the quenching temperature is applied as a process parameter during tempering for a material that is more resistant to strain and stretch and is enhanced thanks to the formation of ferromagnetic, metastable martensite structure (higher temperatures would be better but they lead to the formation of coarse grain and martensite with coarse needles, which, on the other hand, decrease the strength value of the material). The temperatures determined empirically depend both on the steel itself and on the chosen type of heat treatment (cf. Spur, Stöferle 1987, 771f., 779ff.).

<sup>177</sup> In the case of bainite (corresponding to the lamellarly arranged eutectoid parts of the structure during the phase transition of iron-carbon crystals) or pearlitic structure (=steel) (cf. Williams 2002, 17-19).

<sup>178</sup> Even if no manufacturer’s marks are available (cf. Frey 2009, 100).

<sup>179</sup> While copying or imitating smith’s marks on edged weapons from all periods is well-known, such possibility for armour-making has not been considered or discussed so far. This problem should be addressed elsewhere, which cannot be done here due to a small number of marks on gloves and, moreover, to the fact that they are not corresponding.

*Hentzen* discussed here including almost a half of all obtained items indicate Northern Italy and Milan (Type A) – which suggested itself already on the basis of the example of the tomb effigies of Bernabò Visconti in Milan (cf. Fig. 4). Apart from the items from Tannenberg (No. 9; Metropolitan Museum), from Chartres (No. 10), the left glove from Ripon (No. 11), the finds from Cucagna, the items in Florence and those at Churburg, also the glove in the Germanisches Nationalmuseum in Nürnberg (No. 8), which has been speculated so far to have been produced in Germany, should be counted among this group (cf. the map Figs. 17-18).

Three ways of production can be suggested: a plate tube or rather a cylindrically bent or forged plate was diminished by compressing of the material in the work piece heated before or the ends of a narrow cylinder were widened. In such cases, prior closing or riveting must have prevented undesired deformations. However, the frequently obtained metal plates, which, on the side of the pulse, are located only in the cuff area, prove that they were formed completely with an anvil or its horn – just like the detailed work on embossing of the parts for the roots of the fingers or the corrugations on the back of the hand. The material for these could be already cooled, just like the one for the subsequent lavish finishing. The manufacturing and assembly of finger plates were carried out in separate processes. Elements such as rivets, rivet heads and non-ferrous metal applications were certainly obtained from other specialised workshops, like partial gildings of items fashioned in an exceptionally abundant manner were certainly done in other place than the actual forges.

It is by all means possible that these work processes were known also in western Friuli<sup>180</sup>, which specialised in weaponry production, and that similar items were made there; and also in England, where a preferred use of them is visible. Such origin of the find from Brick (Hill) Lane (No. 13) can only be assumed despite the analysis of the material (cf. Williams 2002, 356). If this is the case, it is a copy of an Italian product. The late modifications discussed here, in the form of ribs

strengthening the back of the hand and reproducing the anatomical course of tendons, seem to have been developed in Italy as well. They can be found e.g. in the gauntlets or *Hentzen* produced for Ulrich IV von Matsch, possibly on the occasion of his appointment to burgrave and governor of Tirol in the Museo Nazionale del Bargello in Florence (Milan 1361, No. 16)<sup>181</sup> or in the depictions of Thomas de Vere in Earls Colne in Essex († 1371; No. 60) and of Heinrich Reich von Reichenstein in the Minster Cathedral of Basel († 1403; No. 51).

The territorial attribution can be based on a far-reaching interpretation according to which it is related to the late medieval crusade plans of attacking the Mamluk Sultanate and of recapturing Jerusalem. Their only partial success is of no importance here – what is relevant are the extensive preparations (cf. Riley-Smith 1991, 1514f.). They were initiated<sup>182</sup> by Philip IV of France (the Fair; 1285-1314), then, after Humbert II of Viennois's Smyrniote crusade in the years 1345-1347, the participation of the entire Occident in the crusade was solicited successfully mostly by Peter I of Cyprus (1358-1369; 1360 King of Jerusalem)<sup>183</sup>. He positively aroused a new enthusiasm for such plans, which on the part of the Pope were directed against the impending Ottoman threat, although they were not particularly successful. As a result of the integration of various territorial state armies in the crusade plans and of outstanding personalities in the related pilgrimages (it suffices to name Valdemar Atterdag's pilgrimage to Jerusalem in 1347), standards of armament (including types of arms) and military tactics were established, which could be achieved as to the dissemination of houndskull helmets as well. It seems likely that parts of essential equipment emphasising particular ranks were purchased in Italy for logistical reasons and due to the quality of local workshops. As already emphasised, hand defences were nevertheless rare parts of armament used only by a limited group of people, which is clear on the basis of their scanty occurrence in the castle inventories from the 14<sup>th</sup> c.<sup>184</sup> Obviously,

<sup>180</sup> In close connection with occurrence of ore, manufacturing centres were established near the iron roads located here (for technological aspects of iron ore smelting cf. Williams (2002, 3-6); for spatial distribution of resources and specialised manufacturing cf. Henning (1974). For eastern Friuli, the current state of research is insufficient. For example, the C(j)anal di Ferro, located on the opposite side of the Grivo valley to Cucagna and Zucco, indicates ore extraction. The connection between the castles in Faedis and local mining has not been studied so far. As there is lack of evidence going beyond identification in medieval sources, one should rather assume early modern period mining activities.

<sup>181</sup> Florence MNB R.12. The ribs on the knuckles are ornamented with brass cones and on the wrist with stylised acorns; the gloves bear a manufacturer's mark as well.

<sup>182</sup> The successors, especially Philip VI (1328-1350), could hardly continue the plans due to domestic political problems and wars against neighbours of France.

<sup>183</sup> Till the capture of Alexandria on 10 October 1365.

<sup>184</sup> Such items from the Polish area are available e.g. for Brzeg for 1368 and 1375, Jawor for 1386, 1402 and 1414, Strzelin for 1371 as well as Legnica for 1404 (cf. Marek 2008, 102; after Goliński 1990, 9).

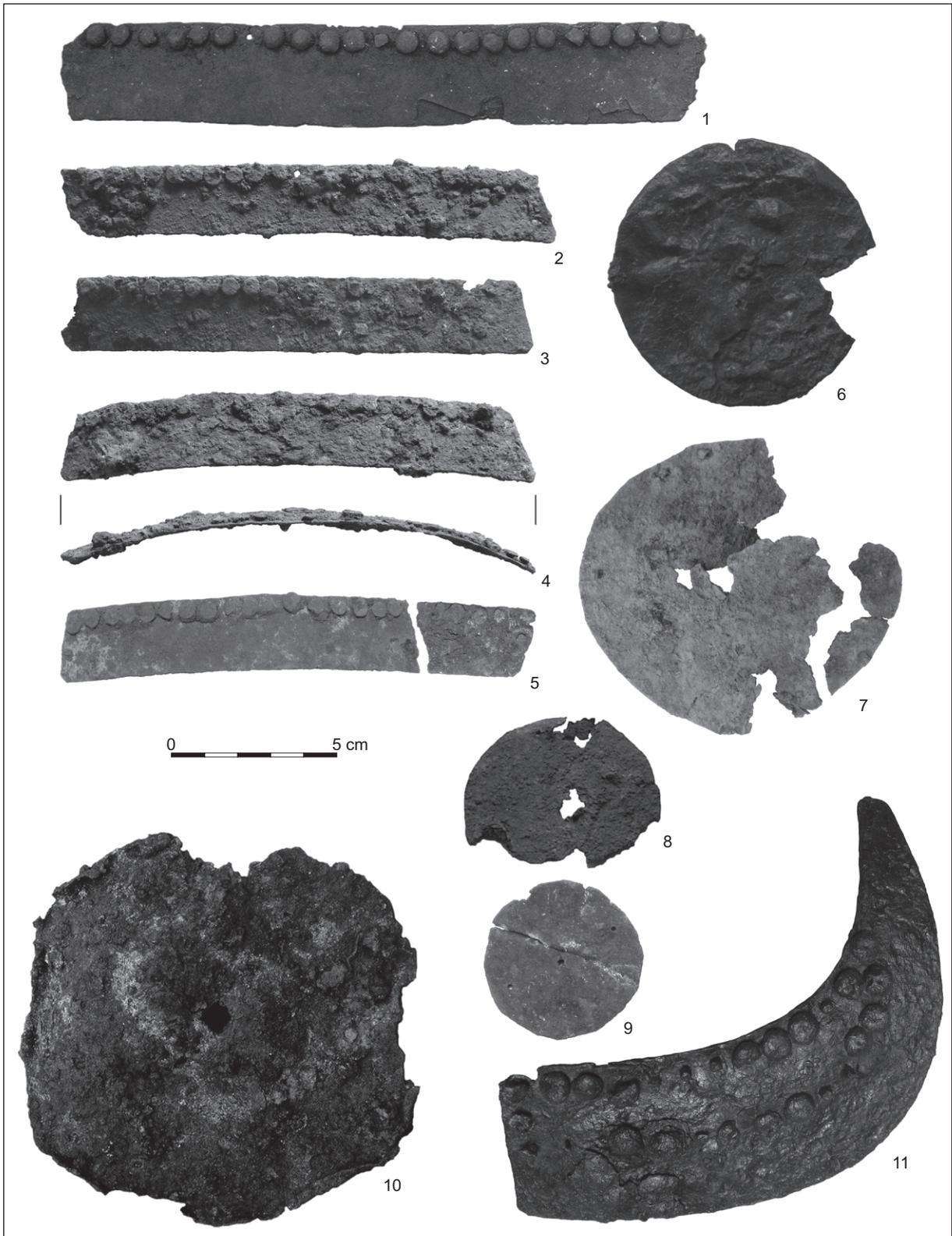


Fig. 20. Castello di Cucagna, Faedis, Italy. Some examples of metal plates which were parts of back or breast defense and other armour parts: 1 – skirt hoop, No. 2003/232; 2-4 – skirt hoops, No. 2001/071a-c; 5 – skirt hoop, No. 2009/068; 6 – domed round vamplate (?), No. 2006/375; 7 – knee-protection or round vamplate (?), No. 2005/035; 8 – discoid armour-braid, No. 2007/038; 9 – discoid armour-braid, No. 2009/068; 10 – round vamplate, No. 2003/237; 11 – iron lame or sickle-shaped hauberk-braid, No. 2007/019. *Photo by H. Grönwald.*

Ryc. 20. Castello di Cucagna, gm. Faedis, Włochy. Przykłady zbrojników będących elementami przedniej lub tylnej części pancerza, a także innych jego części: 1 – folga od szorczy, nr inw. 2003/232; 2-4 – folgi od szorczy, nr inw. 2001/071a-c; 5 – folga od szorczy, nr inw. 2009/068; 6 – okrągła kopułowata tarczka (?), nr inw. 2006/375; 7 – ochrona kolana lub okrągła tarczka (?), nr inw. 2005/035; 8 – dyskoidalna płytką, nr inw. 2007/038; 9 – dyskoidalna płytką, nr inw. 2009/068; 10 – okrągła tarczka, nr inw. 2003/237; 11 – żelazny zbrojnik, nr inw. 2007/019. *Fot. H. Grönwald.*

such inventories should not be related to other fortifications, even castles of similar size to Cucagna may have had different significance and, consequently, may have been equipped differently. It is always striking that gloves are mentioned in small numbers of items (furthermore, types are not distinguished). An example that should be cited here is the inventory of weapons at the Castle of Kapellendorf<sup>185</sup>, which manifests an impressive spectrum of defensive armament for a garrison of 14<sup>186</sup> combatants<sup>187</sup>: at least 40 helmets, 18 burgonets, 11 kettle hats, 27 collars, 13 chain mail, 10 tabards, 23 plate armours, 4 targes (pavises)<sup>188</sup> – but only 8 gloves (at most four pairs)! The unusually large total number results from the role of the castle in the defence of the surrounding area (and) of the town and is hardly comparable to a reserve possessed by, for example, lesser nobility<sup>189</sup>. It is probable that only the most prominent person was equipped with hand defences there.

#### **The information potential of metal finds and other parts of armour from Cucagna**

All excavations at medieval fortified complexes provide finds representing all the inhabitants<sup>190</sup>. The material from Cucagna is available for those

interested in analysing it and therefore should be briefly presented beyond the gauntlets or *Hentzen*. The means for social differentiation of both “things” and their assumed owners is the study of material culture. The division of material remains difficult when it is associated in features – in this case, it concerns identifiable components of garment<sup>191</sup>. They provide insight into the individual equipment of the protagonists of the contexts of the finds through which we attempt to approach these people, which is otherwise hardly possible<sup>192</sup>. Although inorganic material is preserved better, special garments belonging to militaria and parts of defensive arms are generally rare. Only a fraction of plate armours used even before 1500 was preserved and all the more those used before 1400. The main reason for the infrequent preservation is the value of the material and the recyclability – therefore, items from closed finds such as destruction horizons in fortifications without immediate reuse are preserved more densely than ones from constantly used settlements<sup>193</sup>.

The spectrum of metal finds is diversified: besides various knives, several caltrops, hinges, a part of book clasp, an edge piece of a bronze hand bell, chain links, buckles, rings and thimbles,

<sup>185</sup> Constructed to commemorate the inauguration of a new reeve (cf. Kowarzik 2011, 6; after Müller 1988).

<sup>186</sup> 1 knight, 1 bailiff/reeve, 3 horsemen, 1 gate-keeper, 2 gate guards, 2 woodcutters and 4 guards – whereas in the case of a battle, an increase up to 120 men should be considered.

<sup>187</sup> Various digging tools and furniture were mentioned as well, whereas cutting, thrusting and butt weapons were not. Apparently they were assessed as personal belongings or they were to be brought on one’s own. As missile weapons, the following items are listed: 88 stirrup, bench and ring crossbows, as well as 36 related spanning belts and crossbow winders, 30 bowstrings, a considerable number of arrows in quivers, barrels, stocks, boxes and bundles as well as two benches with bolts, 2 barrels of incendiary bolts as well as 9 *Torkis*. Also 11 guns/firearms with ammunition as well as 2 self-triggered crossbows with bolts (crossbow-like heavy bolt-throwers) are recorded.

<sup>188</sup> Either equestrian shields or, rather more probably, wooden upright rectangular shields for foot soldiers.

<sup>189</sup> Here, within an extensive protection system around the town of Erfurt in Thuringia (Germany).

<sup>190</sup> Discussed already for example on the basis of the pilgrim’s sign of Mary in Pantheon (Cat.-No. 2008/098), which, with its find context, represents commodities of religious reminders, spread among all but more intensively among poor social classes (Grönwald 2009, 180). These remarkable sculptures were considered collectible even in high noble circles and could be included e.g. in prayer books. For a general overview of nobility’s material culture and the state of research cf. Krauskopf (2005).

<sup>191</sup> More and more detailed information is available about textiles, poorly preserved themselves. At Cucagna, these were detected only rudimentarily on corrosion products of metals, due to given preservation conditions, and a wide spectrum can be reconstructed and examined as to the function (cf. Kania 2009; 2010).

<sup>192</sup> Despite fundamental interest of archaeology. Lately, they have received intensive consideration in the area of so-called re-enactment, recently addressed as a central issue by means of reception of motifs in cultic male associations interpreted in an early medieval manner (cf. Wamers 2009, 1f., footnote 4). With no intention to belittle the value of experimental archaeology and reconstruction of historical events, unfortunately, a forum is offered this way for escapism of self-promoters and preferences of certain circles of people for (medieval) militaria and the use of them. Its extensiveness is even more amazing when it becomes clear how the material base, on which many of the used reproductions, modified in various ways, are based, is limited. This “movement” is very popular in Eastern Europe – e.g. in Poland, where the number of enthusiasts is estimated at seven million and about 6000 participate actively in battle re-enactments such as the one at Grunwald/Tannenberg (cf. Hreczuk 2010).

<sup>193</sup> Apart from castles, it is possible to identify conditions similar to those at Cucagna only in settlements with appropriate closed finds (cf. settlement of Lausen, Switzerland, and Ödenburg – Tauber 1991, 26). In settlements, the material was otherwise retrieved and used over and over again, which is the reason why little metal is found – even if metalworking handicraft was localised (possibly exactly for this reason). It should also be noted that assessing on the basis of the rare evidence of the craft (including smithing slag – to a lesser extent, evidence of raw material production in the form of salamanders – as well as tools and semi-finished products, smiths were rarely settled in castles – although variegated demand should be assumed. Also at Cucagna, there were no indications of it for a long time, till a forge hammer was found in 2009 (which supports the hope of localizing also the site of a smithy by means of systematic research).

decorative fittings made of bronze and iron, exceptional locks (Cf. e.g. Grönwald 2010, 72, Fig. 14), various coins as well as items related to agriculture and self-sufficiency of the inhabitants of the castle, there were also a carpenter's drill and a chisel tip. All this requires a separate typological processing as "standard material." It is also striking that among the great amounts of nails<sup>194</sup>, there are almost no horseshoe nails, except for only few uncertain items. The use of horses is unsuitable due to topographic conditions, ramps and gate openings in the castle<sup>195</sup>. As for donkeys and mules, as pack animals, they did not enter the inner castle area<sup>196</sup>. Essential for the transport of goods on medieval paths discovered already in surface surveys, they could be kept only between the outer fortifications and the bailey. These areas have been accessible only since recently<sup>197</sup> and horseshoes, strap holders and a spur<sup>198</sup> suggest even the presence of horsemen (Fig. 19). The broad field of various metal finds is crossed by so-called "barometer objects" such as gauntlets or *Hentzen*, which are or are to be documented with particular significance. They distinguish themselves from material sources of the community of inhabitants and are suitable for categorisation in terms of various social status. The possession of such objects implies certain economic and financial power. If it were not only non-ceramic inventory, already tableware would have to correspond to it<sup>199</sup>. Even on the basis of it, it is possible to precisely question what in the finds implies courtly culture or courtly standard of life of a feudal top of hierarchy or a copy of it and how the castle owners, relying on it, differed from

commoners in terms of property situation. The specific material reflected in the finds is related mostly to the practice of a life style copying more costly examples and to maintenance of the standard connected with it<sup>200</sup>. However, it is advisable to be careful about the interpretation: for example, the occurrence of equestrian accessories is regarded in medieval archaeology as significant for verification of the status of "nobility" (cf. Gossler 2003, 348f). They include especially spurs (spiked spurs or rowel spurs), which occur in about two thirds of total finds at castles. However, one should not assume that there is necessarily a connection of this type of find with nobility as they occur also in the context of a gatehouse related to 'lower' guards<sup>201</sup>, at a patrician's residence<sup>202</sup> or at a castle belonging to a community of joint heirs<sup>203</sup>. On the other hand, it is rare at the ancestral seat of the Cucagna family, where, as was mentioned, only little evidence of equestrian accessories is available<sup>204</sup>. What does the lack of these items mean, with their value and possibilities of proliferation and reuse, when the castle alone allows assessment? Founded by a family coming from high nobility, Cucagna combined the military function with clear indication of the social status of its owners. The complex is an element of social distinction and a symbol of power. The owners established a border between themselves and the neighbourhood<sup>205</sup> and demonstrated their property<sup>206</sup>. Whether Cucagna promoted the local owner or a superior authority such as e.g. the king, the emperor or the duke or the patriarch as the ruler<sup>207</sup> is uncertain. After all, the perception of representative claim implies

<sup>194</sup> Wrought-iron nails prevail – which is hardly surprising considering their range of applications in and on the body of buildings to fix structural parts and for fittings. If the nails in the fittings of windows and door wings bent to the back, it is possible to make statements about their strength. Generally, they are building material and, found in the rubble horizons, they support the theories of violent destruction.

<sup>195</sup> Stables for horses (and appropriate accessories) are located elsewhere, which would make necessary an examination of the castle stable/*curtine* at the foot of the castle hill in Borgo Scubla near the village of Faedis which archaeology was deprived of through the recent building activity and using.

<sup>196</sup> Slaughter and dairy cattle is represented by osteological material and bells as metal finds.

<sup>197</sup> Cf. the report of discovery and excavation of Palazzo IV, the bailey and their abandonment (Grönwald 2009, 195; 2010, 71f., Fig. 12-13).

<sup>198</sup> From Palazzo IV A (cf. Fig. 1; with its pattern imitating inlays typical of the 14<sup>th</sup> c. (cf. the find with gold inlays from Jenalöbnitz – Fig. in Gossler 2009, 37 Fig. 16; see also Krauskopf 2005, Tab. 33, Fig. 2; after Stoll 1993; or a similar item from Alsnö Hus – Thordeman 1920, 57f., Fig. 27:11).

<sup>199</sup> Metal vessels take a significant position among them, e.g. a fragmented, deformed bottom of a tin vessel from Cucagna.

<sup>200</sup> If there is no concluding answer, the evidence is still available.

<sup>201</sup> Like at Wartenberg in Northern Hessa.

<sup>202</sup> E.g. Goldstein in Frankfurt.

<sup>203</sup> E.g. Bommersheim, destroyed in 1382.

<sup>204</sup> Apart from the mentioned items, there was also a stirrup with an oval step plate (it should be assigned to the 14<sup>th</sup> c.; an analogous find can be found e.g. in Jenalöbnitz – cf. Krauskopf 2005, Tab. 35 Fig. 3; Gossler 2009, 37 Fig. 16). The rumour that an unauthorised prospector excavated more spurs long ago cannot be proved.

<sup>205</sup> Apart from the representative dwelling form, already with the spatial division of the castle and the court due to various reasons since the 11<sup>th</sup> c. (cf. Grönwald 2010, 66).

<sup>206</sup> The inhabited private castle emphasised since the early 11<sup>th</sup> c. a lifestyle, standard and aspirations, considered already to be self-evident, of the nobility in the Holy Roman Empire and beyond.

<sup>207</sup> On whose good will the erection of the castle depended.

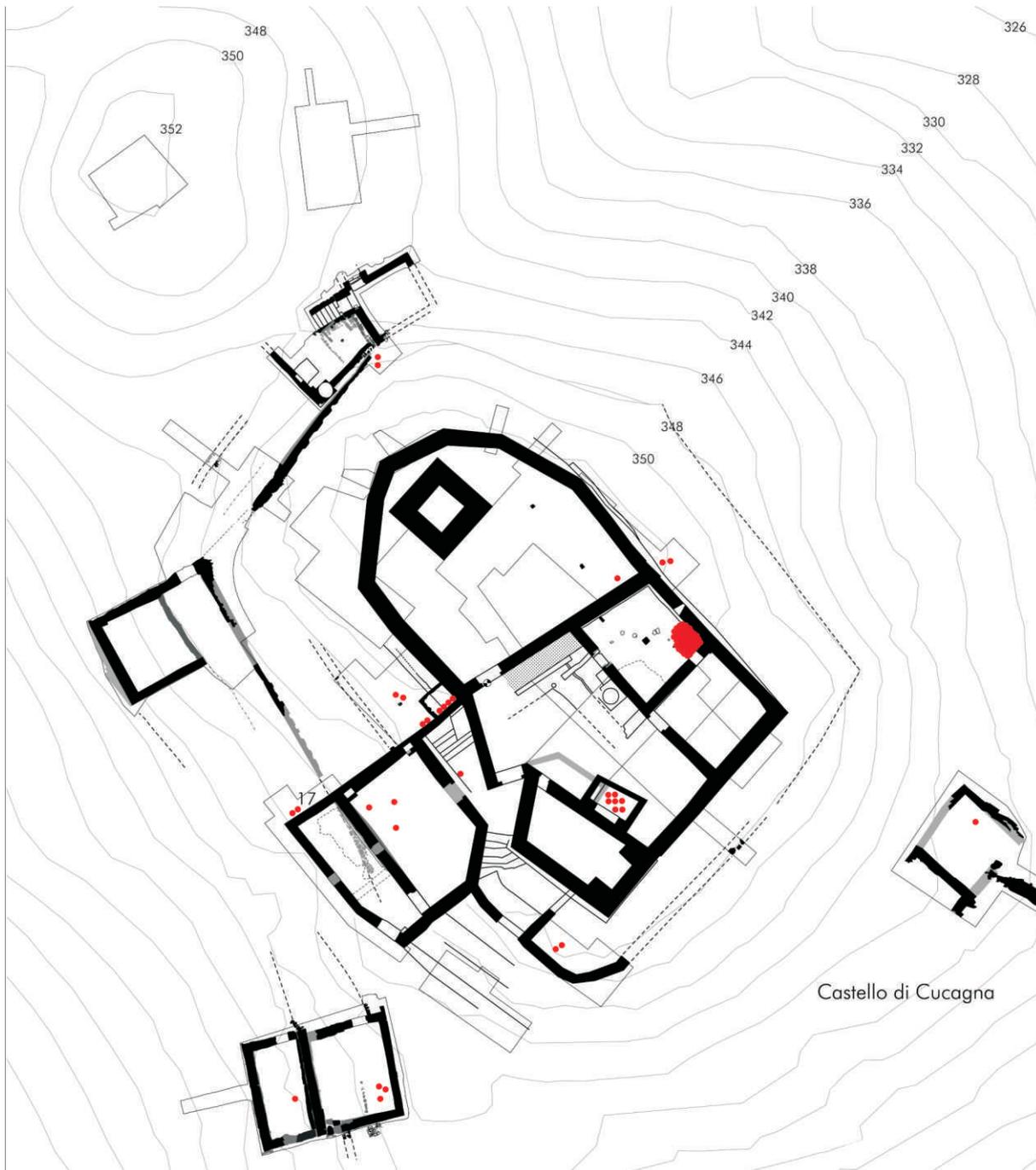


Fig. 21. Castello di Cucagna, Faedis, Italy. Location of the finds of armor parts from Cucagna (buildings structure in black, excavation areas with continuous lines were accrued). *Drawing by H. Grönwald.*

Ryc. 21. Castello di Cucagna, gm. Faedis, Włochy. Lokalizacja odkryć części zbroi z Cucagna (czarnym kolorem oznaczono zarysy budynków, liniami ciągłymi zasięg wykopów). *Rys. H. Grönwald.*

a political presence which is difficult to verify on the basis of finds (cf. Krauskopf 2005, 116). As far

as Cucagna is concerned, it exists<sup>208</sup>, and one was in direct contact with the court of the rulers, also

<sup>208</sup> On the one hand, the family presided over the retinue and stewards of the Patriarch of Aquileia from the 2<sup>nd</sup> quarter of the 13<sup>th</sup> c. till the end of the 14<sup>th</sup> c. (apart from Prampero and Spilimbergo – cf. Carreri 1913, 359; these families had the privilege of enthroning new Patriarchs in the Basilica of Aquileia – on court offices: Lucifer Aquileiensis 1386; cf. Rubeis 1740-1748, 582; Bianchi 1847, 401f.; Carreri 1913, 355) and provided cup-bearers and treasurers (around 1274 also hereditary land treasurers (*camerari ereditari*) and till this time it was present with property at the seat of the Patriarch in Udine – cf. Martin 2006, 14, footnote 46; after Pastore 1983, 25, 29-32).

beyond the dominance of German dignitaries in this function<sup>209</sup>.

It should be recorded briefly that the metal finds<sup>210</sup> occurring due to various reasons more often than average can be studied on the basis of evidence for estimation of the social status of their owners, for example the landed nobility. It is possible to identify with relative certainty the above-mentioned “barometer objects” which belonged to appropriate and appealing parts of equipment for maintenance of feud as a request for right and respect as well as the central element of political presence and representation<sup>211</sup>. They include also special weapons, the use of which in other contexts is limited although not impossible. In a noblemen’s or ministeriales’ castle, they should be closely associated with a presumably superior class with specific behaviour patterns. What is particularly striking among them is, apart from the gauntlets or *Hentzen*, other parts of armour or remains of defensive weapons for direct personal protection (Fig. 20; maximal size: 19.2 x 3.15 cm). Some items requiring a sophisticated individual study<sup>212</sup> were preserved in the core area of the castle and in the courtyard of the first building phase, in the protruding courtyard, in the destruction horizon of Palazzo III, in the gate areas (Gate III A and III B), in fragments in the moat as well. In the bailey, the finds have been restricted to Palazzo IV, which was excavated there<sup>213</sup>. Also in this area, there was

always a connection with fill layers of the end of the 14<sup>th</sup> c. and the 15<sup>th</sup> c. as well as of the rubble of the last destruction. Twice it was possible to discover discs with a central rivet and a rim, which possibly served as riveted kneepad, if not as so-called besagews protecting the elbows or shoulders (cf. Thordeman 1939, 113, Fig. 104a)<sup>214</sup>. A sickle-shaped plate with a double row of rivets can be most probably considered to be shoulder protection or a neck or arm fragment of a coat of plates<sup>215</sup>. The iron plates occurring most frequently, thin and lightly curved, with rows of rivets on one of the long sides (up to 23), have been known and documented for a long time<sup>216</sup>. They are mostly preserved in fragments, heavily corroded and their stability is threatened, which is why immediate restoration and conservation is indispensable. How can one imagine the use of them? Apart from chain mail hauberk, providing insufficient protection against thrusting weapons, fragments of which were preserved<sup>217</sup>, there are also oblong plates, closely related to leather straps (cf. Michalak 2009, 53-57) used for personal protection as well, constituting a ring-shaped covering of the undergarment in the chest area (lame armour with textile on the outside or brigandines are similar only to a limited extent<sup>218</sup>). Generally, they were used – slightly overlapping – in chain mail hauberk made of countless metal rings riveted with each other, which reached over the knees<sup>219</sup>. The low

<sup>209</sup> The Friuli nobility of German origin expanded their power and possessions under Friedrich II in order to ensure his influence over the catchment area to Italy. After Friedrich’s death in 1250, there was a breach: since 1251, when Gregorio di Montelongo became the Patriarch, the position was held permanently by Italian dignitaries, and he (as his successors were obliged to Rome) restricted the influence of high Imperial nobility (particularly in the time when there was no Emperor since 1271). Moreover, the Cucagna family sat in the Friuli nobility parliament and appeared in the sources repeatedly by means of witnesses’ statements, contracts of sale and lease as well as marriages among the distinguished families of the country.

<sup>210</sup> Which requires extensive restoration and conservation measures. For this purpose, in the Istituto per la Ricostruzione del Castello di Chuccho-Zucco, there were established laboratories and storerooms for the material excavated at Cucagna, looked after by restorers and students within the framework of a course at the Albert Ludwig University of Freiburg; the restoration material was partly subsidised by the Freiburg Scientific Society (Wissenschaftliche Gesellschaft). However, the protective measures can be taken only with excavation campaigns in order to preserve the remains of material culture permanently for further processing and exhibition in museums.

<sup>211</sup> The Cucagna family stood out in a Friuli feud and thus secured themselves in an unpleasant way a place in a local legend (cf. Del Fabro 1998, 12-14 – the legend of the feud over Ginevra di Strassoldo, who was promised to Federico di Cucagna but was then married to Odorico di Villalta in May 1218 and abducted by Federico, is embedded in historical conditions and sources).

<sup>212</sup> Exemplary in this respect are schemes of comparable material in the *Acta Militaria Mediaevalia* series such as in Marek (2008, 87-124), or Klimek and Strzyż (2011, 215-240) inter alia.

<sup>213</sup> Further finds should be expected with the continuation of the works at the bailey and the surroundings of the castle.

<sup>214</sup> The application of three little, so far discovered metal plate discs cannot be determined exactly (catalogue numbers cf. Appendix).

<sup>215</sup> Similar forms that can be interpreted as shoe trims are smaller (cf. Thordeman 1939, 122, Fig. 111f.). Couters for protecting the elbow joints have not been found so far. Such items with an archaeological context come e.g. from the Zähringer Burgberg near Freiburg im Breisgau (cf. Steuer 1986).

<sup>216</sup> The spectrum ranges from the finds from Tannenberg (Hefner-Alteneck 1850, 95, Tab. X) to such plates from Hertogenbosch (Nijhof 2007, 241, Fig. 3).

<sup>217</sup> Cf. Grönwald (2005, 130 Fig. 45, Tab. 3/Sample 5/7) as an item in an assembly, single rings occur as well (in bronze as well). For material on neighbouring Motta – cf. PiuZZi (2003, 124).

<sup>218</sup> Cf. Boenheim (1890, 102, Fig. 109), and as a complete item, possibly coming from Milan the brigantine from the collection at the Castle of Churburg CH S69 in Scalini et al. (1995, 232). On later finds of brigantine plates consisting of small parts apart from two armour plates from the Grützpot tower at Stolpe (Uckermark Land District – cf. Krauskopf 2007, 249, Fig. 3).

<sup>219</sup> Not to be confused with the scale armour or *Corrazina* (cf. Peine et al. 1998, 213).

double row of rivets on the cuff edge orientation of counting starting from the plate sheet on the side of the thumb				
counting "according to" the total inventory (inner row) from		row	alternative type	order
1 (= first rivet)	decorative rivet	inner	double function (fixing rivet)	1
2	decorative rivets	middle	fixing rivet	2
8	decorative rivets	middle	fixing rivet	3
14	decorative rivets	middle	fixing rivet	4
19	decorative rivets	inner	fixing rivet	5
25	decorative rivets	middle	fixing rivet	6
30	decorative rivets	outer	fixing rivet	7
36	decorative rivets	middle	fixing rivet	8
40	decorative rivets	outer	fixing rivet	9
45	decorative rivets	outer	repair rivet	(10) 1
50	decorative rivets	middle	fixing rivet	11
55	decorative rivets	middle	fixing rivet	12
13	decorative rivets	outer	rivet hole	1
20	decorative rivets	inner	rivet hole	2
23	decorative rivets	outer	rivet hole	3
25	decorative rivets	inner	rivet hole	4
29	decorative rivets	outer	rivet hole	5
30	decorative rivets	middle	rivet hole	6
39	decorative rivets	outer	rivet hole	7
43	decorative rivets	middle	rivet hole	8

Table 1. Arrangement of rivets from the body armour parts from Cucagna castle.

Tab. 1. Układ nitów elementów pancerza z zamku Cucagna.

height of the spaces between the rivets on the concave insides of the finds from Cucagna and their dense distribution show that a simpler form of a hauberk reinforced with plates should be assumed here. The obtained plates were mostly located on the base material<sup>220</sup> (not under it as in the case of brigandines) and did not damage the gambeson, an elaborate arming doublet worn as undergarment. This simple and perhaps cheap form

of hauberk may have been provided with chain mail sleeves. The benefits of purchase were certainly limited by weight, reduced mobility and air impermeability.

Provisional reconstruction of this defensive armament is definitely possible and it is presented and put for discussion again, without taking into consideration the already known assemblies, in the form of a life image, which makes no absolute

<sup>220</sup> Which should be emphasised in the light of the brigantine from the Castle of Churburg. In order to conduct an extensive and detailed study, all single items should be examined once again separately and assessed, which this article is supposed to encourage.

claim as an illustration of general localisation of parts of armour. Moreover, one of the bowl-shaped discs, which can be interpreted as a poleyn, is combined with contemporary padded breeches. The trousers need also the reinforcement of shinbones and, finally, a chain hood widespread only in the Holy Roman Empire with a rectangular bib and a chain mail coif or a cervelliere was added. They could be worn under a closed padded (pot) helm. A relation to the gauntlets or *Hentzen* cannot be proved, which is why chain mail mittens are attached to the sleeves in the reconstruction<sup>221</sup>. The mentioned context of the find has no definite significance for the dating. Distribution and mostly incomplete preservation often indicate secondarily deposited material, which is why it has to be approached typologically. The reconstruction scheme corresponds to the equipment of a warrior at the end of the 13<sup>th</sup> c. (single pieces may definitely come from the end of the 14<sup>th</sup> c.)! The hauberk was a precursor of the coat of plates<sup>222</sup>, which emerged in the middle of the 13<sup>th</sup> c. and is well documented in the 14<sup>th</sup> c., as well as of the later plate armour, and similar forms of hauberks were worn already since the 12<sup>th</sup> c. (cf. Boeheim 1890, 131, Fig. 143). Also in other places, they are documented with certainty in the 14<sup>th</sup> c. and seem to have been used even at the beginning of the 15<sup>th</sup> c.<sup>223</sup> – so at the time, when it is assumed that plate armours as protective armament provided the greatest possible protection to those who wore them. As the remains at Cucagna are reflected in the findings which are related to the conflicts that led to the abandonment of the castle, it can be assumed adequately for the find of the gauntlets or *Hentzen* from the fire layer in the Palazzo Grande/Palazzo III that the castle's

equipment at that time did not appear particularly contemporary. Findings from the neighbouring castles of Motta (where a group of preserved plates was also found in the destruction layers of the castle which is dated to around 1300 – cf. Gremese 2000, 81f.; Vignola 2003, 80)<sup>224</sup> and Soffumbergo (cf. Gremese 2000, 82-84; Vignola 2003, 182-199)<sup>225</sup> confirm, apart from literary reference points about repairing parts of armour (cf. Scalini et al. 1995, 39), that traditional or obsolete forms were not uncommon among lower nobility beyond the time of their typological emergence and were used for a long time. The castle garrisons with such outdated equipment in terms of defence and weapon technology were not a worthy opponent for organised standing armies of a power like Venice already at the beginning of the 15<sup>th</sup> c. and even more so in the phase of abandonment of most castles built on hills in eastern Friuli.

The phenomenon of obsolete parts of armour is not limited to this area. A famous example is the depiction of the armament of Hüglin von Schönegg († 1377/1386) on his tombstone at the Church of St. Leonard in Basel, which also could be considered obsolete at the time the tombstone was made<sup>226</sup>. However, resignation from iron armour and use of more movable broigne and leather coat can possibly indicate personal preference and its use in Italy<sup>227</sup>. Such arguments certainly do not hold up in the light of the plate armours from mass graves at Visby, where details at the most distinguish “professional” warriors and members of the definitely wealthy farmer contingent from the Danes (cf. Post 1933, 47)<sup>228</sup>. We do not know whether the opponents were buried together or separately here<sup>229</sup>. It appears that the top of the hierarchy were not

<sup>221</sup> In the picture, the tabard worn on the entire equipment presents fictitiously the coat of arms of the Cucagna family.

<sup>222</sup> While the items from Visby had very large plates, at the end of the 14<sup>th</sup> c., metal strips were preferred again due to better mobility; around 1400, they developed into fashionable brigantines.

<sup>223</sup> Partly improved by means of tinning the metal plates for corrosion protection, which has not been possible to prove in the case of the parts of defences from Cucagna. Only on one rosette-shaped fitting from the Gate House Gate III A it was possible to observe a tinned surface (it could originate from furniture coverings and needs not be armour covering; Cat.-No. 2003/296; cf. Fig. 19).

<sup>224</sup> In this case the defence completed with a closed breastplate, as it is known from visual and sculptural representations, e.g. of St. Maurice in the Cathedral of Magdeburg or St. Sepolcro in the Landesmuseum Hannover. Similar analogous items of riveted, curved plates in assembly came from the destruction horizon of the Gesslerburg near Küssnacht dated to 1352 (cf. Williams 2002, 336; Schweizerisches Landesmuseum Zürich, Inv.-No. LM 13367).

<sup>225</sup> Compiled fragments of armour with a gorget, a visor, a breast defence etc., belonging to heavy whole-body armours, can be assigned typologically to the 2<sup>nd</sup> half of the 14<sup>th</sup> c., which confirms a discontinuity of the occupation of the castle after 1352 (Grönwald 2005, 155-158; after Cisilino 1994).

<sup>226</sup> Including the plate gloves, even if the tombstone was possibly made fifteen years later (cf. Gessler 1923, 113; Frey 2009, 100). It remained unnoticed that his kneeling tomb sculpture on the site from 1362/1377 shows him still in a chain mail.

<sup>227</sup> Personal data in Frey (2009, 110; after Meyer 1999, 31-44).

<sup>228</sup> The application of a scallop on an armour breast, possibly a copy of a pilgrimage sign, has not been so far discussed in this respect, but at least reviewed in Marek (2008, 96f.).

<sup>229</sup> What weighs against the latter is the evident haste during the construction of the mass graves, so the division of equipment of differently organised armies was as little possible as the determination of the social status of the dead and their relation to various types of weapons.

represented among them, which explains the lack of single-piece or multi-part types of gloves<sup>230</sup>.

Material possessions or base of a larger community were more crucial for contemporary equipment than belonging to the feudal upper class<sup>231</sup>. However, the latter involved the privileges to carry certain weapons emphasising the status, provided that the knight title was acquired. Apart from the sword, it appears to apply in wide areas also to hourglass-shaped hand defences. The iron garment distinguishing the wearer indicates either the significance of a person worth protecting due to the abilities and usefulness (in a conflict) or his background. Glorified ideas of a technologically perfect armour making its wearer virtually invulnerable can be proved only for the modern times. In the Middle Ages, no one would have indulged in them.

As far as the remains of armament from Cucagna are concerned, it is certain that after the zenith of the family in the 2<sup>nd</sup> half of the 13<sup>th</sup> c., from the early 14<sup>th</sup> c. and till the final abandonment of the castle, despite the unchanged social status, all resources were economised on – perhaps also due to the fact that partisans of the Emperor were involved more and more often in open conflicts. Although the influence of Cucagna was still reflected in the Friuli nobility parliament<sup>232</sup>, complexes such as Cucagna were deprived of the economic foundation in the long run, particularly due to the development of the town of Udine in the centre of Friuli and the concentration of markets there. The financial constraints are clearly visible in the parts of armour used for several generations. They are also reflected in the composition of other material from the finds, which cannot be discussed further here. Various abundantly preserved long-range weapons and less frequent (in comparison with this and parallel complexes) hunting weapons<sup>233</sup> should also be discussed thoroughly in other place, for example the pyramidal forms of heads which dominated among the discovered bolts. Armour-piercing projectiles are by no means an indication

of noblemen's equipment. Rather than them, perhaps pieces of defensive armament serving as personal protection of a knight belong to it. One can be relatively only in the case of symbols of status such as belts or their parts, or to some spurs, stirrups and particular thrusting weapons<sup>234</sup>.

### Summary

The iron gauntlets or *Hentzen* from Cucagna are exceptionally well preserved items, for archaeological contexts, which, furthermore, with their stratified exploration as well as technological and formal details that are yet to be presented provide additional information about time and duration of use. It cannot be proved with certainty that they were lost in combat and indicate a military defeat but it is very likely. This loss was certainly a harm – perhaps even a personal one. For instance, in numerous battle scenes, especially in miniatures from the 2<sup>nd</sup> half of the 14<sup>th</sup> c. lost gloves are a synonym of a defeat of the opponent and are placed clearly in the foreground<sup>235</sup>. Considering the association of the find of the gauntlets or *Hentzen* from Cucagna related to military violence or catastrophic fire destruction, the owner was definitely harmed, if he did not even lose his life.

Who were the defeated in these cases? When the bailey was destroyed in the 1380s, Cucagna was apparently not captured. The limitation of the possible origin of the richly decorated gauntlet or *Hentze* from Palazzo IV B to a northern Italian workshop in a big city workshop indicates, like the presented manufacturer's mark and inspection's mark as well as possible connections of the ornament with a coat of arms motif, that the item should rather be attributed to one of the besiegers of Cucagna from the troops of the patriarch Philip of Alençon – defeated, as they damaged the castle only in the outer area and otherwise one withdrew without having achieved anything. And the other item? Here, the evidence suggests an owner from the castle and a successful capture of Cucagna.

<sup>230</sup> Their existence proves the mentioned burial of Christoffer, who participated in the battle of Visby and died in 1363, in the Cathedral of Roskilde.

<sup>231</sup> The old wisdom saying that only the rich could afford armours and horses (Loftie 1897, 17) should be modified.

<sup>232</sup> E. g. by Joan de Cucanh († 1272). On the parliament cf. Leicht (1968 – particularly on the Cucanea family: parliament protocol of 29 September 1327; see *ibidem*, Nos. 77, 63).

<sup>233</sup> E. g. certain bolt heads. For example, the variance of this material at Soffumbergo was caused by the fact that the castle was a temporary residence of the Patriarch, who had a zoo with exotic game animals built (about hunting weapons cf. Blackmore 1971).

<sup>234</sup> E. g. the rapier from Cucagna (Cat.-No. 2007/047, Fig. 17; cf. Norman 1980).

<sup>235</sup> They virtually correspond to the find situations known so far (cf. Grönwald 2011, 199, Fig. 20:A: the depiction of the battle of Fontenoy-en-Puisaye in Burgundy in 841 in the *Grandes Chroniques de France* (Bibliothèque Nationale in Paris, Ms Français 73, fol. 150) was chosen as an example. Something similar is found many a time in the miniatures ornamenting the incunabula. Particularly detailed depictions of armoured men with gauntlets or *Hentzen* can be found e.g. in *Guiron le Courtois* (Bibliothèque Nationale in Paris, Ms. Nouvelles Acquisitions Françaises 5243, f. 46<sup>v</sup>, 10<sup>v</sup> and 22<sup>r</sup>) or in *Lancelot du Lac* (Bibliothèque Nationale in Paris, Ms. Français 343, f. 33<sup>v</sup> and 10<sup>v</sup>).

Despite indirect evidence and incomplete preservation, all the finds from the castle allow for far-reaching statements as to its development. Thus, regardless of the constant changes in the complex, it is possible to observe an accumulation of material values for the 2<sup>nd</sup> half of the 13<sup>th</sup> c., in which the family played a considerable role in the region. They went beyond the daily needs and applied certain stylistic criteria. In the long run, the resistance of the Cucagna family to the direct sovereign had a unfavourable impact and led to losing significance by the part of the extended family that was based at Cucagna. Thus the apparently archaic type of gauntlet or *Hentze* from Palazzo III A, just as the presented parts of armour seeming obsolete for the context of the find, are a symbol of the demise of lower aristocratic rural authority at Cucagna, which opposed heavily to this development<sup>236</sup>.

The gauntlets or *Hentzen* were once a representative and (as is revealed by the presented picture examples), in high knight environment, quasi-standardised equipment, which could be enhanced with ornaments depending on the financial potential. However, the funds available at Cucagna were limited since 1310. What was not given to Aquilea and the patriarch's troops, was earmarked for the development of the castle. In this time, it reached its greatest dimensions, although even from cursory observation of both the parts of defensive armament and domestic equipment like pottery and high-quality tableware, it is evident that the standards of the 2<sup>nd</sup> half of the 14<sup>th</sup> c. were hardly achieved any longer. The inventory used for generations remained in an obsolete combination and in this form was included in stratigraphically later finds, particularly connected with the end of the fortified residence. The inhabitants could no longer come up to the standards and demands of

the time, in respect of both technology and fashion, entered service elsewhere<sup>237</sup>, like other Friuli noblemen and in the meantime lost even the castle<sup>238</sup>.

It can be estimated that the phenomenon of handing down obsolete parts of armament, considering the political development of the region, which influenced with a slight delay the economic situation of the family, began in the 1<sup>st</sup> quarter of the 14<sup>th</sup> c. The town wars between Udine and Cividale, the conflict between Louis I of Hungary, Venice and the Patriarchate (1342-1383)<sup>239</sup> as well as the concerns fought out by the Habsburgs later in the 14<sup>th</sup> c. did the rest for the negative development<sup>240</sup>. When Venice ensured basic foundations of the region by means of *terra ferma* in the War of Chioggia and communes, ministeriales and castellans wore themselves out in the combat against the Patriarch, the economic demise of castles in the eastern hill region of Friuli was sealed. Since the 2<sup>nd</sup> quarter of the 15<sup>th</sup> c., when Friuli was pacified by Venice in 1420/1421, castles like Cucagna, with their small garrisons, could no longer be considered the seats and centres of authorities. There were attempts to adapt them to the changes in defensive technology of the 15<sup>th</sup> c. because of the Turkish threat between 1471/1472 and 1499 (cf. Wiesflecker 1999, 169), which can be particularly well understood using the example of Cucagna and Zucco. However, the families opposed persistently the new power relations and turned from the isolation that resulted from them to the Habsburgs and the County of Gorizia, especially when it was inherited by Maximilian I (1468-1519) in 1500. This did not bring advantageous changes to the castle and the family: after the Austrian-Venetian war in 1508, damage due to fire and earthquake between 1511 and 1522 led eventually to the abandonment of

<sup>236</sup> E.g. by withdrawing from the obligations to the Patriarch and going over to the Habsburg side of the County of Gorizia (cf. Zahn 1877, 137; Ludwig 2009, 146 – after the untitled chronicle in the Biblioteca Marciana in Venice: Skynella von Cucagna, in fact the general captain of the Patriarch's troops fighting against the Habsburgs, recognizes Duke Rudolf IV of Austria as the ruler and is later declared a rebel). For this reason, they joined the alliance of Rudolf IV with Louis I of Hungary (also involving: the Archbishop of Salzburg, the Bishops of Passau and Bamberg, King Kazimierz of Poland) against the Emperor and Rudolf's father-in-law as well as Margrave John of Moravia.

<sup>237</sup> Like e.g. Odorico, who, with the agreement of his father, Gerardo di Cucagna, fought in Germany for Charles IV (1346-1378). Since 1355, he received for this an annual pension from the Florentine Imperial taxes (renewed in 1357, after his death a cause of a considerable legal dispute – cf. Ludwig 2009, 145, footnote 97) and was elevated to Lateran Palatine in 1362 with his brother Skynella who supported in fact the opposing party (*ibidem*, 147 footnote 102). Gerardus de Cucanea was probably knighted by Charles after the coronation for Emperor on the bridge over the Tiber (sources: *ibidem*, 145f. footnote 98).

<sup>238</sup> Between 1364 and 1365, as Cucagna offered asylum to the convicted Walterpertoldo di Spilimbergo (cf. Paschini 1990, 540; Ludwig 2009, 152, footnote 123).

<sup>239</sup> Patriarch Ludovicus I della Torre was imprisoned by Rudolf IV. After he was freed (members of the Cucagna family among others applied for this at the imperial court), he allied in 1364 with Louis I and north Italian cities against the Dukes of Austria. His action against the antagonistic rules such as those of Spilimbergo polarised the small aristocrats of Friuli again (cf. Ludwig 2009, 150-153; with presentation of important historical key points; e.g. *ibidem*, 126). They opposed him more strongly, like Odorico di Cucagna as well then, and after Marquard von Randeck, they opposed even more the subsequent Bourbon interlude.

<sup>240</sup> 1356-1358 and 1378-1381.

	Kat.-Nr.	Description	Find place	Dating
2	1987/073	Fragment of a hauberk/body armor from plate-segments (2-parts, to overlap), 3 iron sheets	Cistern, inner bailey of 2 <sup>nd</sup> construction phase	14 <sup>th</sup> /15 <sup>th</sup> c.
3	1987/173	2 fragments of plate-hauberk	Cistern, inner bailey of 2 <sup>nd</sup> construction phase	14 <sup>th</sup> /15 <sup>th</sup> c.
4	2001/071a	Knee-protection or round vamplate?	Gatehouse III B/outside of <i>poterula</i> (postern gate)	1310?
5	2001/071b	Plate from body armor/of plate hauberk with rivets	Gatehouse III B/outside of <i>poterula</i>	1310?
6	2001/071c	Plate of hauberk with rivets	Gatehouse III B/outside of <i>poterula</i>	1310?
7	2001/073e	Plate of hauberk with rivets	Gatehouse III B/outside of <i>poterula</i>	1310?
8	2001/083a	Plate of hauberk with rivets	Gatehouse III B/outside of <i>poterula</i>	1310?
9	2001/083j	Plate of hauberk with rivets	Gatehouse III B/outside of <i>poterula</i>	1310?
10	2001/095d	Plate of hauberk with rivets	Entrance of Palazzo III/gate III B	1310?
11	2002/044	Plate of hauberk with rivets	first inner bailey, III, feature 4, planum 2	15 <sup>th</sup> c.
12	2003/232	Plate of hauberk with rivets	Gate III A, Feature 15, above planum 1	2 <sup>nd</sup> half of the 14 <sup>th</sup> /15 <sup>th</sup> c.
13	2003/237	Plate of hauberk with rivets	Gate III A, Feature 15, above planum 1	2 <sup>nd</sup> half of the 14 <sup>th</sup> /15 <sup>th</sup> c.
14	2003/294a-b	Fragments of hauberk with rivets	Gate III A, III, Feature 15, planum 1-2	2 <sup>nd</sup> half of the 14 <sup>th</sup> /15 <sup>th</sup> c.
15	2005/035	Knee-protection or round vamplate?	trial trench beside the tower (SE, at the hillside, above planum 1	2 <sup>nd</sup> half of the 14 <sup>th</sup> /15 <sup>th</sup> c.
16	2006/287	Fragments of plate-hauberk	Palazzo III, quadrat 6, planum 1	1511-1522
17	2006/345	2 fragments of plate-hauberk with rivets	trial trench Palazzo III NE (outside)	1310?
18	2006/375	domed round vamplate?	Palazzo III, quadrat 6, planum 2	1511-1522
19	2007/034	Fragment of plate-hauberk with rivets	trial trench of NE frontal wall, above planum 3	14 <sup>th</sup> /15 <sup>th</sup> c.
20	2007/038	discoid armour-braid	trial trench NE frontal wall, above planum 3	14 <sup>th</sup> /15 <sup>th</sup> c.
21	2007/019	sickle-shaped hauberk-braid with rivets, 25 bigger fragments of plate-hauberk, 18 small fragments	Stray find during preparation for reconstruction; Palazzo II A	15 <sup>th</sup> c.
22	2007/278	laminated fragment of armor with rivets	Terrace gate III B (location of trebuchet?), quadrat II, feature 6, planum 2	1310?
23	2007/305	Fragment of plate-hauberk	Terrace gate III B (location of trebuchet?), quadrat II, planum 2	1310?
24	2009/068	2 fragments of plate-hauberk with rivets	Palazzo IV A, quadrat 3, above planum 1	1382-1388
25	2009/068	discoid armour-braid	Palazzo IV A, quadrat 3, above planum 1	1382-1388
26	2011/040	Fragment of plate-hauberk	Palazzo I, trench 1; above planum 1, feature 5	14 <sup>th</sup> /15 <sup>th</sup> c.
27	2011/046	Fragments of plate-hauberk with rivets	Moat I, enlarged trench 2; above planum 1, feature 28	15 <sup>th</sup> c. ?

Table 2. Finds of body armor (concerning Fig. 20-21 – list includes older finds; gauntlets = 1:a-b).

Tab. 2. Znaleziska osłony ciała (Fig. 20-21 – do zestawienia włączono starsze znaleziska; rękawice = 1:a-b).

the fortifications near Faedis. Thus, a complex of buildings and finds was preserved, which otherwise would have been much more transformed in Early Modern Period and which we can now draw knowledge from. The samples of material such as for example hourglass-shaped gauntlets or *Hentzen* can encourage not only to deal with the history of one of the central regions of Central Europe. They are all the more suitable for discussing the information potential of such finds, relevant to the status, and they are noteworthy not only locally. A lot of the items mentioned for comparison have been presented or discussed only incompletely so far. However, one can often assume similar contexts which led to their preservation. The networks of connections developed here should not counter the ideas that it is possible

to construct clear stages of development on the basis of single groups of refined equipment and even on the basis of armoured gloves. Surprisingly, it turns out that in contrast with earlier records of single finds, which attempted to explain the stages of development only basing on such, in the early dealing with this type of find, more foresight was demonstrated and diversification of the development was identified throughout the entire 14<sup>th</sup> c. (cf. Hefner-Alteneck 1850, 94), before original characteristics developed from different variants in the 15<sup>th</sup> c. To some extent with handed down forms as mannerist creations for example of the era of Maximilian, in which particularly the spectrum of militaria was widened considerably – adequately to a European transition phase accompanied by catastrophic events.

### Catalogue references to the finds from Cucagna

*Details of the gauntlet Cat.-No. 2006/395 from Palazzo III A*<sup>241</sup>

The simpler item of the right gauntlet or *Hentze* of hourglass-shaped armoured gloves from Cucagna, with a paw-like shape of the distal knuckle part of the metacarpus, weighs 235.44 g and measures 13.5 cm in length, 12.0 cm in width and 10.5 cm in height. The back part is divided with grooves, which due to severe wear and tear and corrosion possessed still indistinctly recognisable arrow- or crow's foot-like terminals towards the wrist. Moreover, a bridle which is riveted on in a way that enables it to move easily, whose purpose was to secure the glove, was preserved above the knuckles or the ball. For the sake of strengthening, the edge of the cuff is folded inside, and the fold involved additionally the leather padding of the armoured glove. On the side of the pulse, there is a plate closing the cuff on the wrist. The exploration was done on 14 August 2006 immediately after discovery, exposition and *in situ* documentation – it was removed en bloc on a part of the bedrock<sup>242</sup>. In the Istituto, the find was preliminarily conserved<sup>243</sup> and temporarily cooled and stored. First precautionary measures as to the highly stable preserved iron sheet were taken by the conservator Domenico Rumo, and thus the preservation of the item was secured. Existent corrosion sites and adherent external agglomerate were removed, the item was partially supplemented and it was protected with a corrosion protection coating. The measures were thankfully financed by the Istituto per la Ricostruzione del Castello di Chucco-Zucco<sup>244</sup>. Corrosion products appearing again required further conservation measures<sup>245</sup> from 29 July to 14 August 2008, which is why the protection coating was solved with a solvent mixture made of ethanol and white spirit (60:40) and the lacquer

layer underneath as well as the supplements were removed mechanically with acetone (partially in acetone vapour bath under a foil) and a scalpel<sup>246</sup>. The progressing formation of clods and the increase in salt under the back of the hand were prevented by sporadic removal of salt and cleaning of the ground<sup>247</sup>. After renewed bonding of the fragments and partial, stabilising supplements in the damages, it was possible to secure the breaking edges with glass-fibre fabric<sup>248</sup>. Conservation was conducted by means of applying a deep penetrating corrosion protection coating with a hydrophobic effect made of microcrystalline wax Cosmoloid H80<sup>249</sup>, wrapping in tissue paper with a bag of ProSORB pearls (temporary, step by step on a minimum to be reduced conditioning value 40% RH, sewn with cotton yarn in Tyvek) in a hermetically closing PP-container (Emsa).

*Detailed information about gauntlet Cat.-No. 2008/034 from Palazzo IV B*<sup>250</sup>

The second right gauntlet or *Hentze* from Cucagna, hourglass-shaped one as well, weighs 206.57 g (without smaller and bigger damages at least 232.40 g) and measures 13.3 cm in length, 12.7 cm in width and 9.5 cm in height. It is abundantly studded with rivets and has an armourer's mark in the area of the back of the hand and an almost square iron plate riveted in the area of decorative rivets (the row near the edge).

On the surface corroded irregularly in the find condition with pustular covers and small hollows, there were single reddish and yellowish-brown areas of active corrosion and the preservation of the metal core of the iron plate seemed doubtful. The restoration could be started immediately after exploration and removal of loose grey-brown soil deposits as well as filling with soil and roots and it included several plate fragments found in the surroundings. Suspended corrosion products were removed mechanically using ethanol and a mixture

<sup>241</sup> Restoration of the feature: Natalie Lehnhardt.

<sup>242</sup> Discovered and documented by Anne Heußner.

<sup>243</sup> Processed by H. Grönwald.

<sup>244</sup> 21 August – 29 September 2006, L. A. A. R. S. r. l. Conservazione e Restauro Beni Culturali; report from 5 October 2006.

<sup>245</sup> Restoration protocol of 16 November 2008, monitoring and post-processing of the feature in campaigns in 2010 and 2011.

<sup>246</sup> The new corrosion products were removed with a scalpel, a fibre glass pen and Titriplex III gel [Titriplex III (EDTA, 2-Na) 10% in dest. H<sub>2</sub>O, buffered to pH 5.0 (ROTH-buffer solution citric acid/NaOH)], agglomerations consisting of large parts of stones and chips of charcoal with a grinding machine and with fused aluminium oxide attachment and steel wire brush attachment.

<sup>247</sup> There was partial doubling and remodelling of a cellulose handle with Paraloid B48N on intact surfaces within areas delimited by cracks. After hardening, the clods could be detached vertically (a quasi strappo technique on the smallest area, a method known rather from restoration of frescos).

<sup>248</sup> Bonding with Paraloid B48N, completing with dyed Primal [Primal acrylic emulsion (Lascaux), pigments (iron oxide black, iron oxide red, iron oxide yellow, Prussian blue, Champagne chalk)].

<sup>249</sup> In a 15-minute bath in a c. 70°C warm solution with white spirit at 100-140°C. After evaporation of the solvent, polishing of the wax coating – with a grinding machine and a natural hair brush attachment at a lower rotational speed.

<sup>250</sup> Restoration of the feature: Susanne Litty; monitoring of the feature in 2010 and the statistics of rivets: Silke Wiedmann.

of ethanol and water (3:1) before firmly adherent corrosion products were handled with various tools made of organic material and with a grinding machine (fused aluminium oxide attachment  $\text{Al}_2\text{SiO}_3$  in various forms as well as steel wire brush attachment). Orange-red areas of active corrosion appearing locally to a limited extent (akaganéite?) required sporadically further mechanical treatment. In order to avoid breakings during the uncovering and to support the obtained plate, it was wrapped in PE foil and inner and outside moulds made of PU building foam were prepared. It turned out that there was no local element formation around the decorative rivets and that iron in this areas was externally not more corroded. Single fragments could be glued with Paraloid B48N and the breaking edges could be strengthened with fine glass-fibre fabric on the inner sides. Partial supplement and retouches were conducted with pigmented acrylic emulsion, chalk and hollow glass beads were used as filling material, before a corrosion protection coating with a hydrophobic effect made of Cosmoloid H80 was applied in white spirit at 100-140°C [polished after evaporation of the solvent; wrapping also in tissue paper with a bag of ProSORB pearls (temporary, step by step on a minimum to be reduced conditioning value 30% RH, sewn with cotton yarn in Tyvek) in a hermetically closing PP-container from Emsa].

*Description of the inventory of rivets*

Preserved inventory: 156; total (including rivet holes): 172; of which decorative rivets: 137; of which decorative rivets with fixing /double function: 5; restorable total inventory  $\geq$  188.

Counting of the double row on the cuff edge from the opening under the ball of the hand on the side of the thumb – and of the sequence of fixing rivets and damages (rivet holes): inventory of rivets on the cuff edge (the row turning to the back of the hand, inner): 56; inventory of rivets on the cuff edge (the row turning to the edge, outer): 48; inventory of rivets on the cuff edge (total): 104; fixing rivets on the cuff edge: 11; damages: 8.

Further riveting on the cuff and the back of the hand (counting from the area of the thumb/left

edge of the plate): on the right cuff edge: 2 fixing rivets (13-14) with broken joining plate to the opposite cuff edge; on the ball of the thumb edge: 2 fixing rivets (16-17); beneath: 2 decorative rivets placed under one another (105-106).

On the plate edge/corner between the thumb and the index finger before the 107<sup>th</sup> decorative rivet: 1 rivet hole, then 11 decorative rivets in a row (107-117): under the 4<sup>th</sup> and the 5<sup>th</sup> decorative rivets: a group of three decorative rivets (118-120); the 8<sup>th</sup> and the 9<sup>th</sup> decorative rivets: 1 rivet hole (12); under the 11<sup>th</sup> decorative rivet: 1 rivet hole; after the 1<sup>st</sup> decorative rivet: 1 fixing rivet (18); the 2<sup>nd</sup> decorative rivet from the plate edge with an end plate (19; double function); after the 5<sup>th</sup> decorative rivet: 1 fixing rivet (19); the 6<sup>th</sup> decorative rivet from the plate edge with an end plate (21; double function); after the 7<sup>th</sup> decorative rivet: 1 fixing rivet (22); the 10<sup>th</sup>-11<sup>th</sup> decorative rivets with an end plate (23-24; double function).

Knuckle edge: on each of the knuckles: 2 fixing rivets (25-30) on the left and on the right of the knuckle curve, each above one pair of decorative rivets (preserved near the index finger, middle finger and ring finger); pairs of decorative rivets: per knuckle flanking pairs of decorative rivets (decorative rivets 121-131); preserved from the index finger to the little finger, on the middle finger only on the right: 1 decorative rivet (127) and 1 rivet hole (14), on the little finger preserved only on the left side).

The ball of the hand on the left: 4 rivet holes along the edge (15-18).

Left cuff edge: 2 fixing rivets (31-32) with broken joining plate to the opposite cuff edge.

The back of the hand: under the index finger and the middle finger: 3 decorative rivets in a group (132-134); under the ring finger and the little finger: 3 decorative rivets in a group (135-137); a damage under the middle finger and the ring finger.

*Other finds of body armour from Cucagna*  
Other finds of armour were presented in Table I.

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## STALOWE PIĘŚCI I INNE ZNALEZISKA Z TERENU ŚREDNIOWIECZNEGO ZAMKU CUCAGNA

### Streszczenie

W artykule omówiono znaleziska przedmiotów metalowych, a w szczególności elementy osłon ciała, pochodzące ze średniowiecznego zamku Cucagna w północno-wschodnich Włoszech. Jego celem było udostępnienie tego materiału zainteresowanym badaczom i umożliwienie jego dalszych analiz. Dwie odkryte na zamku rękawice pancerne, określane też w literaturze jako *Hentzen*, potraktowano jako przykład, osadzając je w ich kontekście kulturowym. W wyniku szczegółowej analizy tych elementów uzbrojenia udało się ustalić nie tylko pewne fakty dotyczące samego zamku i jego wyposażenia, ale również uzyskano dodatkowe informacje o zabytkach użytych jako analogie. Dzięki temu udało się rozszerzyć ich tradycyjny obraz funkcjonujący w literaturze, a bazujący głównie na ich chronologii i funkcji. Ten wysokiej klasy element wyposażenia średniowiecznego rycerstwa pokazuje, że biorąc pod uwagę formę zabytków, możliwe jest ustalenie ewolucji ich rozwoju – szczególnie w 2. połowie XIV w.

Docelowo jednak badania zamku Cucagna przyniosły inne, ważniejsze z punktu widzenia funkcjonowania obiektu ustalenia. W wielu miejscach sekwencja konstrukcji zespołów zabudowań i obiektów archeologicznych może zostać powiązana ze źródłami historycznymi. Ich treść jest konsekwentnie rozpoznawana. Na ich podstawie zostały poczynione nowe spostrzeżenia na temat warunków życia mieszkańców średniowiecznego i wczesnonowożytnego zamku. Wykorzystanie tych informacji, uwzględniające kwestie ekonomiczne i inne związane z tym sfery, jest nadal rozwijane. Dodatkowych danych powinny dostarczyć również źródła topograficzne. Już teraz rozwój tych ziem w średniowieczu, jak i lokalną historię Friuli (Friuli-Wenecja Julijska) można wytłumaczyć na przykładzie Cucagni, której szczytowy moment rozwoju przypadał na okres między XI a 2. połową XIII w., a później na początku XVI w.

Tłumaczył: Arkadiusz Michałak