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ANN BRYSBAERT & MELISSA VETTERS

A moving story about exotica: objects' long-distance production chains and associated identities at Tiryns, Greece

Abstract

Studying materials through a *chaîne opératoire* approach is common practice in studying craft activities. Whilst unravelling a chain of production can be very rewarding, many issues still arise: can all the steps be captured even when no material evidence is present, i.e. how can we approach production chains in the case of inconsistently or partially preserved material in settlement contexts? How may the steps that we are able to observe be contextualized in order to inform us about interconnected activities? In our research project carried out at Tiryns, Greece, we map certain steps through the production and consumption journey of a series of objects and materials, some of which have been referred to as "exotica". Our aim was to understand the life histories of those specific items, and with that, those of the people associated with them. In problematizing the etic category of exotica, this paper investigates patterns of movement that transcend the pure material aspect. By considering the technological and social networks that are the prerequisite for the movements of materials, whether during production, circulation or consumption, or all together, we can analyse the full value and meaning of these materials. We suggest that terms such as local and non-local need to be clearly defined and contextualized, and to be of explanatory value to the networks in which they are implicated.

Exotica in archaeology

Questions of identity and social distinction seem intricately interwoven with exotica or exotic materials, objects and practices. Within the archaeological discourse, "exotica" were recently defined as "any foreign as opposed to indigenous materials and products", and as "symbolic tools of distinction, primarily used in contexts of competition".[1] Recent interviews revealed that exotica were recognized in a wide variety of phenomena (*Table 1*). The way in which individuals characterized exotica was equally revealing (*Table 2*). People from different geographical and social backgrounds who participated in the interviews[2] seemed to agree on many of the characteristics surrounding exotica, but not necessarily on what exotica are or what an exotic item represents. The way people thus view exotica seems interconnected with how they ascribe value to materials, items and practices that are different from their own and familiar material environments, as also evidenced in the interviews, from which it was clear that exotica did not always equal high value. Hence, as archaeologists our value ascriptions are likely to be different from what

[1] Vianello 2011, vii. *The Oxford English Dictionary* (hereafter *OED*) defines "exotica" as follows (summarized): "Objects considered interesting because they are out of the ordinary, originating from a distant foreign country. Origin: 19th century: from Latin, neuter plural of *exoticus* 'foreign'". The same dictionary also characterizes exotic as (summarized): "Originating in or characteristic of a distant foreign country: exotic birds, plants, places, attractive or striking because colourful or out of the ordinary: youths with exotic haircuts, of a kind not ordinarily encountered (especially of metals or fuels), *specially produced* (our emphasis): exotic chemicals. Origin: 16th century: via Latin from Greek: ἐξωτικός: foreign, ἔξω: outside", www.oed.com, accessed 12/05/2012. Another way to categorize such items is: imported inanimate items, fauna and flora (dead or alive, and their respective parts), and humans that were captured or imported by force, for the latter group, see Michaelidou & Voutsa 2005.

[2] The interviews were conducted between March 2012 and February 2013. 50 people from varying age groups (from 19–70+ years old) were asked the same two questions, resulting in *Tables 1–2*. Half of the respondents answered orally in a discussion forum, others in reply to a typed questionnaire where the questions, their age group and their professional/educational background were asked. People of nine different nationalities and countries took part and the majority of the respondents (48 of the 50) fell in the age group of 20–30 years old. The groups targeted were chosen from the immediate vicinity of the interviewer and formed student groups of different nationalities and continents, study backgrounds and degree levels. Other groups targeted were colleagues and acquaintances chosen in different age groups and from different educational backgrounds. The lowest educational degree obtained was a high school diploma; the highest was a doctorate, with other degrees in between.

Table 1. Interview results: examples of exotica (interview results and documentation by A. Brysbaert).

1	British beers, Indian spices, colourful cocktails
2	African art & people, ethnic/Indonesian furniture
3	Far-away places, palm beaches, Asian temples
4	Elephants
5	Strange and colourful plants, flowers and fruits
6	Colourful birds, unusual animals
7	Rare people
8	Penis holders, shrunken heads
9	Bavarian traditional costumes
10	Meteorites, space ships

Table 2. Interview results: characteristics of exotica (interview results and documentation by A. Brysbaert).

1	Felt to be from far away geographically or culturally
2	Something hard to get, expensive, rare
3	Something that falls beyond our traditional viewpoint which is culturally determined
4	Something astonishing, surprising
5	Unusual in form, shape or function
6	Something unfamiliar
7	It may cause envy, irritation, curiosity, awe, rejection
8	Something that tells an unusual story, that illustrates unknown practices and behaviours
9	Something magical, poisonous, dangerous

people in the past may have thought about specific objects or features and what was perceived as local versus non-local.[3]

Exotica as a specific type of material or object also seems closely linked to cultural mixtures of materials from different origins and their interconnection with people's mobility patterns and cultural encounters. As such, exotica can be associated with the concepts of hybridization and creolization,[4] terms that may imply mobility, technology transfer, material culture exchange and several forms of appropriation.[5]

From the available literature on exotica in archaeology,[6] the types of context and aspects of value given to such items[7] seem to play a role in determining what can be considered as exotica. Most of this is determined from an etic western viewpoint. Crucial in studying exotica and their meaning is thus discussing aspects of value.[8] Both exotica and value are linked to aspects of exchange. Voutsaki follows Marcel Mauss's definition of exchange as a total social phenomenon which consists of "... the flow of material resources [together with] ... a complex network of prestations and services that circulate along the basic articulations of the community: the kin relations and the power structure".[9] Exchange in pre-monetary societies, especially gift-exchange, she maintains, is crucial to social competition because it created bonds of dependence and obligation. Exotica were often tightly linked with societal elites collecting such items from afar (e.g. Hatshepsut's expeditions to Punt), but also in acquiring them[10] through the process of gift exchange, as the Amarna letters amply indicate.[11] Foster illustrated through textual, iconographic and archaeological evidence that the Ancient Egyptian and Near Eastern rulers mentioned in their texts and on wall decorations that exotica—rare, transmuted, and transformed, live or inanimate—were all vital to elite groups since these items confirmed the king's rule, and proved his political and economic capabilities in far-away regions.[12] Such items were taken to prove this and their depiction formed mental maps and texts metaphorically linking such items to the ruler's heroic and mythical presence. In this case, the value embedded in exotica seems to lie in the differences in exclusivity of objects and material in association with other goods because these give clues to the variations in social roles and cultural significance of these exotic items. Moreover, the motivations that people may have had in past contexts (which may not always be that different from modern ones) to acquire exotica may have given exotica additional values and meanings. These can be broadly placed in three categories. The first is practical: such items, objects, material or technologies are deemed better for certain functions or of superior quality than local ones. The second is social: they may improve individual status and increase social inequality; and the third is symbolic: political, ideological and ritual/religious reasons that increase social inequality, thus distinction.[13]

3 Cf. van Dommelen & Rowlands's (2012, 25–27) discussion on what they call an "exclusionist ontology".

4 The terms have their roots in colonial discourses and have been heavily discussed in the post-colonial literature subsequently, see van Dommelen 2006, esp. 119; van Dommelen & Rowlands 2012.

5 See Maran 2012 on aspects of appropriation.

6 See for instance the recent edited volume by Vianello 2011.

7 Beauty, rarity and distance, functionality, ritual connotation: Helms 1993, 3–4, 6, 8, 33.

8 Bevan 2007, 16–18 proposes to investigate quantity, quality and diversity of artefact classes to reconstruct plausible emic value systems or classifications.

9 Voutsaki 1995, 7–8.

10 Foster 2008, 328.

11 Moran 1992.

12 Foster 2008, 328–331.

13 The specific items acquired may not do any of the above with the intent to emulate other cultural (and "superior") thoughts and behaviours, instead, they may synthesize a shared cosmological set of viewpoints or values, both by people who adopted the foreign thing and by those who are used to it already (after van Dommelen & Rowlands 2012, 27). This allows for those who do adopt it into their material world, to be equals in the equation that is formed through any of the relational contacts, whether technical, social or both.

The three categories easily blur into one since they interweave, while social and symbolic reasons are, in essence, practical motivations too. These categories, however, do not solve all issues encountered concerning the uncritical continuous usage of exotica in archaeological contexts. For example, it does not consider at all how the individual who appropriated new items within their material world, whether elite or otherwise, perceived and understood those items. Such expressions are based, according to Legarra Herrero,[14] on pure assumptions, rather than on studies based squarely in their specific context. This brings us back to Voutsaki who sees the value of labour, involved in the production of prestige items *in pre-monetary contexts*, in the aesthetic embellishment and semantic virtuosity. She, therefore, understands labour value as the product of exclusive, often ritualized skills rather than invested energy.[15] It may well be people's perceived foreignness of specific objects that displays a connotation with appreciation and thus provided the objects with value and cultural significance. Such perceptions may be based on stylistic, iconographic, technical, material and functional properties of such items, and their connection with other associated items and within the contexts in which they were produced, distributed and consumed.

For the purpose of the present article, we define exotica as something that implies, first, a geographically distant location of origin or is thus non-local, and bears a certain level of value due to its scarcity, whether natural, cultural or political.[16] Moreover, according to the *OED* definition cited above exotic presently can also simply refer to something out of the ordinary or something specially produced. This was made very clear in the interviews: people may find things exotic even if they had no high value. Thus, modern archaeological characterizations of items as non-local and/or valuable may not always be adequate notions of something exotic and we, therefore, suggest to also extend this cautious understanding to past concepts of exotica. For example, originally exotic jewellery may have been passed down generations as heirlooms: people may have become totally familiar with specific items (in contrast to finding them out of the ordinary) and thus not have considered them exotic any longer. We contend that people's *contextualized* actions, their gestures and constant interactions with their material surroundings are crucial to any definition of exotica and thus to the subsequent discussion since it is the *contextual approach* which may suggest ever-dynamic value shifts of such objects and materials, depending on when and where specific materials were interacted with. The main aims of our article are therefore twofold.

First, we aim to explore the usability of the concept of exotica in the contextualized analyses of three workshop areas (case studies 1–3 below) in Late Bronze Age Tiryns (Argolid, Greece).[17] Through a holistic material approach we dissect the often uncritically used concept of exotica in archaeological contexts, into closely interlinked sets of objects and materials that help to dissolve the inflexible dichotomy[18] between local versus foreign. We thus allow for a much more nuanced way of looking at materials, objects, processes and practices by asking what these are and what they may have meant. Second, we aim to investigate the mechanisms and socio-economic strategies that several people involved in the production processes may have employed and manipulated to assign values to things, and why these strategies were employed as such. We thus inquire about people's social identity constructs and about different levels of perception.

This paper addresses these questions by employing a *chaîne opératoire* approach to investigate the production processes of certain items from Tiryns. We aim to increase our understanding of how people at Tiryns may have perceived, allocated and reallocated values, social significance of items deemed exotic from our contemporary viewpoint and potentially by their prehistoric users, and how they may have determined something as being exotic within their daily interactive patterns, practices, and social strategies.[19] The most obvious way to study exotica in the past may be to reconstruct past value creation or value ascription. Often, these high value objects were made upon specific demands for specific people. They were associated with prestige-building, thus enhancing a select group of people's social identities. The relation between value and an individual's standing are mutually defined since, in gift exchange, the perceived value of goods offered and a recipient's prestige are created simultaneously and are mutually acknowledged. Value, it seems, relies on the intrinsic properties of, on the labour towards, and on the history of each object, thus on its past and "personality", as it moves through circulation networks. Value is thus accumulative and increases from production through the various steps of exchange or circulation into its consumption, seen here as a pre-monetary mode of (symbolic) accumulation and as a mechanism for social

[14] Legarra Herrero 2011, 269.
[15] Voutsaki 1995, 9.
[16] Voutsaki 1995, 11.
[17] http://www.tracingnetworks.ac.uk/content/web/cross_craft_interaction.jsp.
[18] A hallmark of post-colonial theory is to recognize ambiguity in cultural contexts when it is removed from binary oppositions such as local versus foreign, import versus export, after Counts 2008, 112.
[19] Foster 2008 indicates how people in the Egyptian context were referring to certain specific objects and materials as exotic so the concept is not just contemporary but of course the objects or practices signified as such are highly culture-specific and context-dependent. We argue that the difficulty does not lie in the concept *per se* but rather in reconstructing what may have constituted or have been contextualized as exotic at any given time in the past.

differentiation.[20] Complementary to a value-based approach to exotica, however, is studying the concept from a scarcity-approach: objects that only occur rarely but may not be of intrinsic value or apparently gain added value, may fall under the concept of exotica as well. These realizations fit extremely well with a *chaîne opératoire* and cross-craft interaction approach to exotica since both methods allow for the study of such processes, of production and circulation, and of interwoven networks that link such items and people.

Approaching the production of exotica

Since our overall project of the workshops studies at Tiryns predominantly focuses on aspects of production as one part of the objects' biographies and their value assignment processes, a short excursion into the *chaîne opératoire* and cross-craft interaction approaches to ancient or pre-industrial technologies is required as they bear relevance to the discussions of our case study materials. The methods are employed to study the material left-overs found within the workshop areas, and based on these remains they allow us to reconstruct the processes in their production.

Technology, on one hand, consists of processes, tools, equipment, and skills, thus knowledge and practices, and forms, on the other, "the mutual relationship between people and things through skilled performance".[21] It has also been defined as non-verbal forms of communication to unite or divide social groups.[22] Technologies are thus, in essence, social phenomena with which everyone engages, consciously or unconsciously, in the present as well as in the past. Technologies shape materials and people, who, in turn, shape technologies. However, access to technical skill and knowledge relating to specific crafts seems to have been often restricted, probably best exemplified by the medieval guilds system of which one could become a member. After long years of intensive training with a master and after successfully completing a *chef d'oeuvre* that had to be approved by the master, the apprentice could become a journeyman for another lengthy period of time. During those years he continued to develop additional skills, those of management and leadership, before he had to produce a *chef d'oeuvre élevé*. If that was accepted, he was then considered skilled enough to take the master's place. These guild members created and maintained a strong sense of community, protected their craft, and were the crucial points of contact for workers on the move. They also managed a migrant's obligations towards newly encountered artisans.[23] Technologies and craft activities can thus include or exclude. Those people, then, who obtained knowledge through journeys abroad (e.g. the journeymen, merchants, travelling artisans), may have been imbued with accumulative levels of prestige after each trip. Such prestige has also been associated with the capability of obtaining exotic raw materials, manufactured goods, animate and inanimate beings.[24] There seems, thus, to be a link between technology, knowledge, social status and exotica or non-local items in certain contexts.

From the 1930s, the anthropologist André Leroi-Gourhan developed and employed a method which he called "the *chaîne opératoire* of technological production".[25] In the original French publications of the 1940s, he described *processes* rather than a set of linear actions or steps.[26] These processes were both technologically and socially interwoven, processes that afforded[27] the production of objects and features, but also of people and their relations.[28] Leroi-Gourhan's original texts also exemplify and elucidate the complexities of production and consumption, aspects we encounter in studying archaeological materials and what we can make of these, both technologically *and* socially.[29] Moreover, the social and sensory processes embedded in human interaction and communication with each other and materials while choosing, forming, distributing and consuming them, need emphasis.[30] In a recent example, the intricacies of the ever changing rhythmic and repetitive movements or gestures[31] needed to saw a plank, were brought home in a lively description showing how wood clearly interacts with the sawing hand, how it even dictates the sawing action required. This series of movements, the process of sawing the plank, is processional, not successional.[32] The successful outcome of a well-sawn plank clearly depends on the expertise of the sawing hand, built up over time, with this material by repeating these movements over and over again.

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20 Voutsaki 1997, 37–38. We also think, however, that value can also decrease at various points during the life history of objects, for instance from metal tool to metal scrap.

21 Ingold 1999.

22 Kenoyer 2000.

23 Sennett 2008, 58–60.

24 After Helms 1988 and Knapp 1998.

25 Leroi-Gourhan 1964–1965.

26 For the latter, see e.g. Tykot 2011. Ingold 2011, 53 and Kuijpers 2012, 146, for instance, are referring, indirectly, to the *chaîne opératoire* as a linear process, a sequence; this is too narrow a reading of Leroi-Gourhan's work, in our view.

27 Cf. Gibson 1979, 16–23 for a discussion on affordance in relation to his notions on medium, substances and surfaces.

28 See e.g. Schlanger 1994; Pfaffenberger 1992, 199; Dobres 2000; 2010.

29 Brysbaert 2011a; see also Naji & Douny 2009, 414.

30 Brysbaert 2008, 47–48; see also Kuijpers 2012.

31 Gestures are crucial to Leroi-Gourhan's understanding of the *chaîne opératoire* as well.

32 Ingold 2011, 53–54.

A second aspect to this technological phenomenon is that no craft is conducted in isolation. While this is common sense, it remains worthwhile emphasizing this point in order to pay specific attention to it while studying archaeological materials. Cross-craft interaction,[33] or the ways specific crafts are connected to others through materials, knowledge, skills and gestures, tools and equipment has frequently been identified in studies of the technology in painted plaster.[34] Since people traditionally study archaeological remains by material category, such connections between crafts may easily be missed and unfortunately cross-craft studies are still not often conducted systematically and consciously.[35] A good example of cross-craft interaction in material transfer is attested at Amarna in Egypt, where 18th Dynasty metallurgists supplied scraps of their copper working activities to the workshop next door where glass was being produced. Those scraps were subsequently used as a colouring agent to make blue coloured glass.[36] Cross-craft interaction is not limited to a few craft activities.[37] It is inherent to *each and every* craft activity or technology, as long as technologies and crafts are conceptualized as practices, be their outcome material or immaterial. In the same way, people are intrinsically interwoven through what they do, and how they interact, be it via musical performances or through specific modes of conduct.[38]

In approaching the material left-overs from the different Late Bronze Age activity area contexts in Tiryns through multiple *chaînes opératoires* and cross-craft interaction lenses,[39] we try to uncover several dimensions of the encountered craft activities, including the social practices that accompany and motivate such craft activities, and their impact on people's lives. We thus specifically trace *chaînes opératoires* from mostly fragmentary finds in selected archaeological contexts to reconstruct past activities and practices where possible, and, in doing so, the dichotomy between the material and immaterial dissolves. In investigating material remains from this combined perspective, we attempted to classify the range of different production processes that may deliver an item with exotic connotations. As a starting point, we formulated certain expectations we had with regard to different production processes. Based on Laffineur's work we used these as a scale to characterize local and imported materials in our archaeological contexts.[40] Five idealized production modes emerged, several of which are similar to Heymans and van Wijngaarden's categories:

Items produced elsewhere and imported:[41] from a *chaîne opératoire* perspective, no direct material evidence pertaining to the production of such items will be found in the local context where it may have been consumed (e.g. lapis lazuli cylinder seals found in Thebes[42]).

Items produced locally with imported materials, in foreign or local styles:[43] parts of the *chaîne opératoire* can be expected in the local context (e.g. ivory inlays and debris of ivory working from Mycenae[44]).

Items produced locally with local materials, imitating foreign objects:[45] more or less the entire *chaîne opératoire* debris can be expected in the local context, apart maybe from the initial raw material collection (see below for a discussion of the issue of what constitutes local in geographical terms, e.g. scarabs produced in Crete, in Egyptianizing style[46]).

Items produced locally with imported/local materials, by foreign artisans with knowledge of foreign technologies: the same amount and types of *chaîne opératoire* left-overs may be expected in the local context as for category 3 (e.g. Mycenaean inlaid daggers[47]).

Items produced locally with local/imported materials by local artisans who possess specific skills (possibly learned elsewhere): the same amount and types of *chaîne opératoire* left-overs may be expected in the local context as for category 3 (e.g. Mycenaean-style stone vessels found at Mycenae[48]).

While thought to be very helpful initially, these categories are not without problems and this became clear when studying Heymans and van Wijngaarden's low value exotica discussion,[49] a category of materials that did not fit easily in the list above. We thus considered it crucial to unpick the different elements

[33] Term coined by McGovern 1989; see also Brysbaert 2004; 2007; 2008.
[34] Brysbaert 2004; 2008.
[35] But see most recently: Thomas 2012.
[36] For details, see Shortland 2000.
[37] E.g. Foster 1989; Vickers 1989 for early examples of cross-craft interaction studies.
[38] Brysbaert 2007; 2011a.
[39] Brysbaert 2007; 2008; see also Brysbaert &Vetters 2010.
[40] Laffineur 2005, 53: who argues against the simple dichotomy of local versus import, a dichotomy which we did not find very helpful either.
[41] Heymans & van Wijngaarden 2011, 124: international goods; imports and exports.
[42] Even though some may have been reworked locally from the original group: Porada 1981–1982, 4. This example already shows that the end of the production chain is not located at the primary use stage only and that several stages in the production chain of an object can change location easily.
[43] Heymans & van Wijngaarden 2011, 124: international goods; objects in native traditions that incorporate foreign stylistic or material elements.
[44] E.g., the LM IB ivory workshop on the Royal Road in Knossos or the House of the Artisans in Mycenae, see Tournavitou 1995, 191–193.
[45] Heymans & van Wijngaarden 2011, 124: international goods; imitations and derivatives.
[46] Pini 2000; Legarra Herrero 2011, 269.
[47] Laffineur 2005, 57.
[48] Bevan 2007, 163–164.
[49] Heymans & van Wijngaarden 2011.

of the *chaînes opératoires* so that the exact meaning of what raw materials are, on the one hand, and manufactured goods, on the other, can be clearly defined. A raw material can best be described as the material which has not yet been worked for *the purpose for which it has been acquired*. The definition thus implies a specific timing and location that are important in the interpretation of the types of materials that may be found in workshop contexts, and the meaning they have in that specific context in order to identify the place as a proper workshop.[50] Heymans and van Wijngaarden are far from the only ones who understand ingots (glass or metal), as raw materials. This is not necessarily wrong but ingots can *also* be seen as the outcome of several steps in the process of producing finished glass objects such as beads or inlay pieces or metal items such as javelin heads. In the view of those who produced and transported the ingots, they can only be seen as manufactured goods. When these ingots reached the Aegean, the artisans, further processing them, likely saw these as the raw materials or half-finished items to be transformed into beads, inlays or javelin heads. This situation may become even more complex when recycled materials, as a starting point for production, are under consideration. The separation between a raw material, a finished good, and the many stages in between is thus dependent on people's viewpoints and their situatedness in specific contexts. An object or material can thus be a raw material, a half-finished product and a finished object, depending on its specific context of acquirement, production, distribution and consumption.

Value assignment to these materials and items is, therefore, also linked to this situatedness (or context) and may, as Voutsaki indicated, be accumulative, from situation to situation, or context to context. If we then try to fit, for example, the glass beads in one of the above five categories, they would fit both in category 1 (as far as the glass ingot production is concerned) and 2 (the actual shaping of the beads), and potentially even in 4 and 5. This demonstrates that trying to fit materials and items in specific categories of production modes may prove a vain attempt that may only work if such production modes, and thus the items under study, are de-contextualized. It is thus the wide array of, for instance, recycled materials in craft production that oppose the use and understanding of the *chaîne opératoire* concept as a linear process of consecutive steps. In this context, the notion thus forces us to consider it as a series of interwoven processes, or a network of practices, wherein people's interactions, skills and perceptions of their material surroundings are at the forefront. If we approach these exotica, whether of high or low value,[51] from a *chaîne opératoire* perspective, this allows us to study the human processes, and to take into account the gestures that transformed materials into finished objects. Thereby, we may also get one step closer in understanding how people allocated value to their material surroundings: first during production, but then also during the other spheres of an object's life, its distribution and consumption, its potential reuse(s)[52] up to its final discard.

Workshops and activity areas in Late Bronze Age Tiryns

The discussion of the following case studies focuses on archaeological remains from the acropolis at Tiryns (*Fig. 1*), situated on the fringe of the Argive plain. The site evolved from the middle of the second millennium BC to *c.* 1200 BC into one of the most important Mycenaean palatial settlements and probably the major port of the Mycenaean core zone. The acropolis is divided into an Upper, Middle and Lower Citadel (*Fig. 2*) that were successively fortified in the 14th–13th centuries BC. A multi-phase palace with a Mycenaean *megaron* developed on the Upper Citadel. Monumental architecture, such as the Western Staircase, the Eastern and Southern Galleries, and the so-called Syringes testify to the power and the external connections of the local elite during late palatial period.[53] An extensive settlement existed in the plain surrounding the citadel during the palatial and the post-palatial periods. Tiryns as a central place during the palatial (*c.* 1400–1200 BC) and post-palatial periods (*c.* 1200–1050 BC), had far-reaching connections to the eastern Mediterranean.[54]

The discussion on exotica in the present article is one part of a comprehensive review and analysis of workshop areas at Tiryns.[55] The aim of that project is twofold. It is, firstly methodological: how do we identify a workshop and the differences within the range of workshops that existed? The Mycenaean workshop model by Tournavitou[56] has been a useful starting

[50] See the categories described by Tournavitou 1988 to identify a space as a workshop space; see also Hasaki 2011.

[51] But see Voutsaki 1995, 9 on the complexity of value scales, symbolic value, and potential value differences embedded in production *and* circulation/exchange if controlled: given values can increase during circulation. She goes further in 1997, 37: "Value is created *by* and *in the process* of exchange, and not only at the moment of production."

[52] See Philipps 2012 on Aegean jewellery.

[53] Maran 2010; Brysbaert 2014b, in press.

[54] Maran 2004b; Stockhammer 2008, 273–283; Vetters 2011b.

[55] See for instance Brysbaert & Vetters 2010; Brysbaert 2011a; 2011b; Vetters 2011b; Brysbaert 2013; 2014a, in press; Vetters & Brysbaert, forthcoming. The final results of this study will appear in a co-authored monograph by the authors.

[56] Tournavitou 1988.

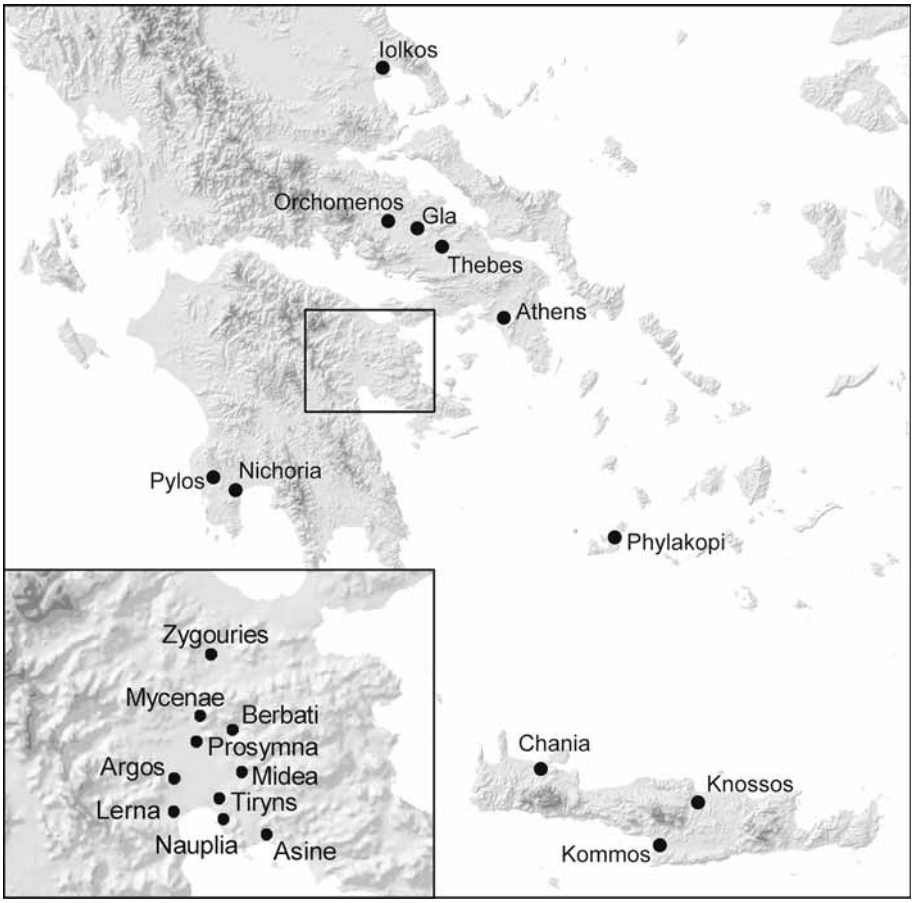

Fig. 1. Map of Greece with inset for the Argolid and Tiryns (map by Anavasi editions/Hans Birk, our modification).

point but, having tested this against the data from one of the Tiryns-based case studies,[57] the model needs reconsideration and should only be used as a guide, not as a prescription on how to define and recognize Mycenaean workshops. Secondly, through investigating our case study materials, supplemented with comparanda of such objects found in workshop contexts from other published sites, we traced technological processes and investigated how these are represented on other sites with the aim of complementing our understanding of some of our own incomplete *chaînes opératoires*.

Since 2008, more than 1,200 objects have been studied at Tiryns, macroscopically and microscopically, and many via non-destructive instrumental analysis, more specifically by means of Laser-Induced Breakdown Spectroscopy which aided in the clarification of material identifications.[58] All finds have been photographed using a variety of lenses. Their materials and function, their last usage, their context and technologies, their preservation, and their conservation and post-excavation treatments have been described in detail. Information from data recording, contextual and stratigraphic analysis, as well as plotting the finds on phase distribution maps has proved useful in order to analyse where concentrations of specific find categories exist and what these patterns may have meant in the contexts in which they were found. We, therefore, examined all categories and materials present in four case studies from the Lower Citadel and Lower Town Northeast in Tiryns.[59] The case studies were selected on the bases of their potential to study craft activities and because of chronological overlaps between them. This last factor was deemed important since we wanted to study diachronic similarities and changes in active craft production processes and practices, if and where possible. For each of the potential workshop case studies we investigated four questions. First, how do we detect workshop activities, what parameters indi-

[57] Brysbaert 2014a, in press.

[58] In close collaboration with Dr D. Anglos, Dr P. Siozos and Dr A. Philippidis, based at FORTH-IESL, Heraklion, Crete. The result of this on-going work will be published separately.

[59] This study covers all small finds and the architectural surroundings in which these were found, but we did not include the decorated and undecorated pottery since these are currently under study by other colleagues; we also had to take into account specific time restraints.

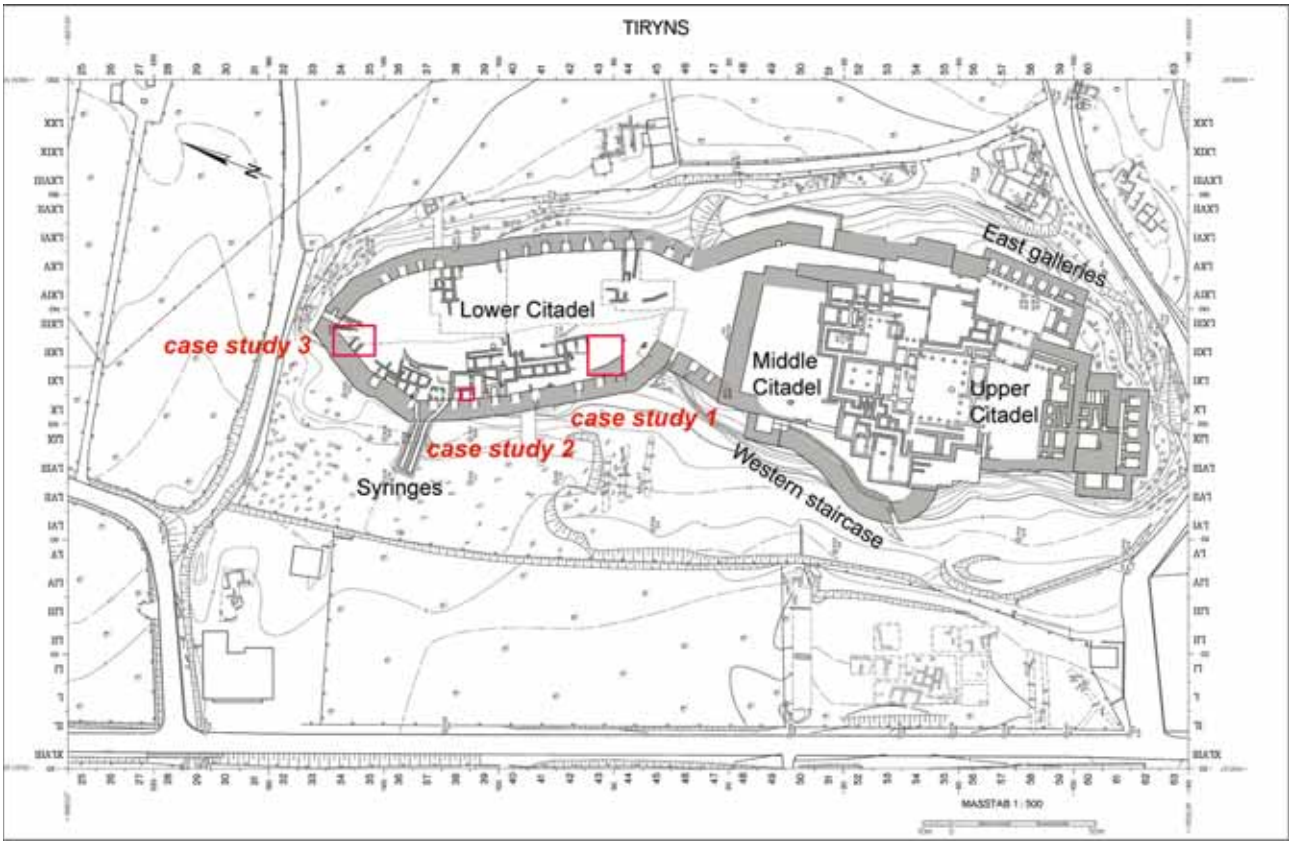

Fig. 2. General plan of Tiryns indicating the case studies mentioned in the text (general plan by Tiryns-archive, with kind permission by Joseph Maran, our modification).

cate a workshop, and how do we interpret the data? Second, how are workshop activities interlinked, not only in the portable material finds, but also in the installations, fixed facilities and its architecture? Third, what craft activities took place in each and how do we recognize these? What and where may inherent biases in the material record impede reconstruction of craft activities? And fourth, if more than one craft was present, do we have evidence of cross-craft interaction, technically and socially, and where does it show?[60]

While these questions are not treated in this paper *per se*, they form the basis of our general investigation on craft activities in Tiryns from LH IIIB Early to LH IIIC Late. As a result of investigating our case study materials with these questions in mind, because of Tiryns' apparent presence as a node of contact in several interregional networks and its importance as a harbour in that period,[61] we also investigated technological and social networks and practices that may have existed beyond the Aegean. As such we were, in a way, forced to pay close attention to a specific series of finds that have commonly been described in the literature as exotica or exotic. In order to test the exotica concept, and its attribution to these Tirynthian materials, we examined all small finds recovered from three of our case study workshop areas along several *chaînes opératoires* and analysed them in their respective architectural contexts. As such, we were in a position to reconstruct the potential technical and social practices and strategies, several of which may have reflected past connections to and attitudes (such as value assignments) towards what has been referred to until now as exotica. With this extra data we could assess the validity of employing the term exotica to these and other past contexts.[62] Here, we present the materials, objects and features which we have studied in some detail, and contextu-

[60] Cf. Brysbaert & Vetters 2010.
[61] Maran 2010, 722.
[62] The material studied, however, is part of a settlement assemblage and thus does not derive from a closed depositional context as, for instance, material from a funerary context would. Therefore, we took into account the extent and state of preservation as well as the overall artefact concentrations to distinguish between secondary and primary deposition, where only the latter can be meaningfully linked to activities that may indicate left-overs from craft activities.

Table 3. Lower Citadel Southwest, case study 1A—non-local materials or components in the LH IIIB Middle terrace house during the first occupation phase (hor. 16 a-16 a50).

TN-number	*Find spot*	*Description*	*Stratigraphic horizon*	*Bibliography*
TN 784	LXII 43/11 XVIc a13.12	Egyptian blue lump	hor. 16 a2	Rahmstorf 2008, 188, cat. no. 2053, pl. 94,6d.
TN 666	LXII 43/26 XV a13.37 R210	simple glass bead	hor. 16 a3	Rahmstorf 2008, cat. no. 1950, pl. 84,24
TN 684	LXII 43/31 XVIa c13.44	simple glass bead	hor. 16 a50	Rahmstorf 2008, cat. no. 1963
TN 667	LXII 43/84 XVII d13.48	simple glass bead	hor. 16 a50	Rahmstorf 2008, cat. no. 1940, pl. 84,14
TN 680	LXII 43/83 XVII c13.46	simple glass bead	hor. 16 a50	Rahmstorf 2008, cat. no. 1957, pl. 84,31
TN 681	LXII 43/95 XVIII c13.27	simple glass bead	hor. 16 a3	Rahmstorf 2008, cat. no. 1958, pl. 84,32
TN 683	LXII 43/75 XVIII a13.33	simple glass bead	hor. 16 a3	Rahmstorf 2008, cat. no. 1960, pl. 84,34
TN 686	LXII 43/83 XVII a13.47	simple glass bead	hor. 16 a50	Rahmstorf 2008, cat. no. 1965
TN 905	LXII 43/94 XVIII a13.27	simple glass bead	hor. 16 a3	Rahmstorf 2008, cat. no. 1944, pl. 84,18
TN 906	LXII 43/83 XVII b13.45	simple glass bead		Rahmstorf 2008, cat. no. 1952, pl. 84,26
TN 1044	LXII 43/51 XXIb a13.34	ingot	hor. 16 a3	Archaeological Museum Nauplio, inv. no. 32441; Rahmstorf 2008, cat. no. 2208, 270-271; Kilian 1988, 130, fig. 37,4
TN 710	LXII 43/46 XVIa a13.20 R210	lead clamp	hor. 16 a1	
TN 740	LXII 43/12 XVII a12.95 R214	lead scrap	hor. 16 a1	
TN 748	LXII 43/42 XVIb a13.19	lead sheet, prob. fragment from lead vessel	hor. 16 a3	
TN 726	LXII 43/85 XVII a13.30	lead clamp	hor. 16 a50	
TN 762	LXII 43/47 XIV a13.49 R210	scrap bronze	hor. 16 a4	Rahmstorf 2008, cat. no. 323
TN 786	LXII 43/47 XV b13.42	slag	hor. 16 a3	Rahmstorf 2008, cat. no. 1769
TN 785	LXII 43/33 XVIa R215	slag	hor. 16 a4	Rahmstorf 2008, cat. no. 1782

alize specific finds that lend themselves to the discussion of exotica in three Late Bronze Age palatial areas (*Fig. 2*): two subsequent building horizons of a LH IIIB Middle context (case study 1A and 1B); LH IIIB Developed/Final deposits in Room 10 of Building Complex A (case study 2); the LH IIIB Early/Middle levels in the North of the Lower Citadel and the superimposed remains of the LH IIIB Final Building XI (case study 3A and 3B).[63]

1A. In a LH IIIB Middle terrace house[64] from the mid-13th century BC (*Fig. 3*), several finds and features[65] that indicate craft activities and/or a non-local origin of an object or its material components were revealed in its first building phase (stratigraphic horizons 16 a–16 a50; see *Table 3* for non-local items[66]). These are: a mould[67] in Room 214 next to a fireplace; a lump of Egyptian blue near the mould; single glass beads in Rooms 210, 215 and several in the open area to the south; a bronze ingot hidden in the south wall of Room 215; lead scrap in Rooms 210, 214 and 215 and in the open area to the south; some bronze scrap and slag in Room 210[68] and Room 215;

[63] For the absolute chronology of the palatial period see Shelmerdine 2001, 331–333 tab. 1; for the system of stratigraphic horizons in the Lower Citadel see Kilian 1988, 132 fig. 27; Rahmstorf 2008, 14; French & Stockhammer 2008, 183, tab. 4 with slightly different terminology.

[64] Kilian 1988, 130, 133–137, and fig. 36.

[65] See also Rahmstorf 2008, 270–272, 287 pl. 133.

[66] In the subsequent find list and *Table 3* we do not refer to all finds excavated in this area and do not discuss stratigraphic issues, unless finds mentioned are difficult to assign either to the earlier or later occupation phase of the LH IIIB Middle building. Instead, we focus on the objects and installations that reveal information about activity areas and especially pyrotechnological processes due to constraints in time and space. However, all finds from these areas will be discussed in a forthcoming monograph.

[67] TN 647 (+ TN 645 + TN 646 = joining fragments from later strata). TN stands for the relevant database number in the Tracing Networks: Cross-Craft Interaction in the Cross-Cultural Context of the Late Bronze Age Eastern Mediterranean/Tiryns database. Find spot TN 647: LXII 43/01 XVId R214, stratigraphic horizon 16 a1; (find spot TN 646: LXIII 42/95 Vb, stratigraphic horizon 22; find spot TN 645: LXII 41/82 Xb, stratigraphic horizon 18); Kilian 1988, 137, 140 fig. 37,1; Rahmstorf 2008, 81 cat. no(s). (1789–) 1791, pls. 35,3, 90,9.

[68] Both, scrap bronze and slag, were found close to the furnace in Room 210.

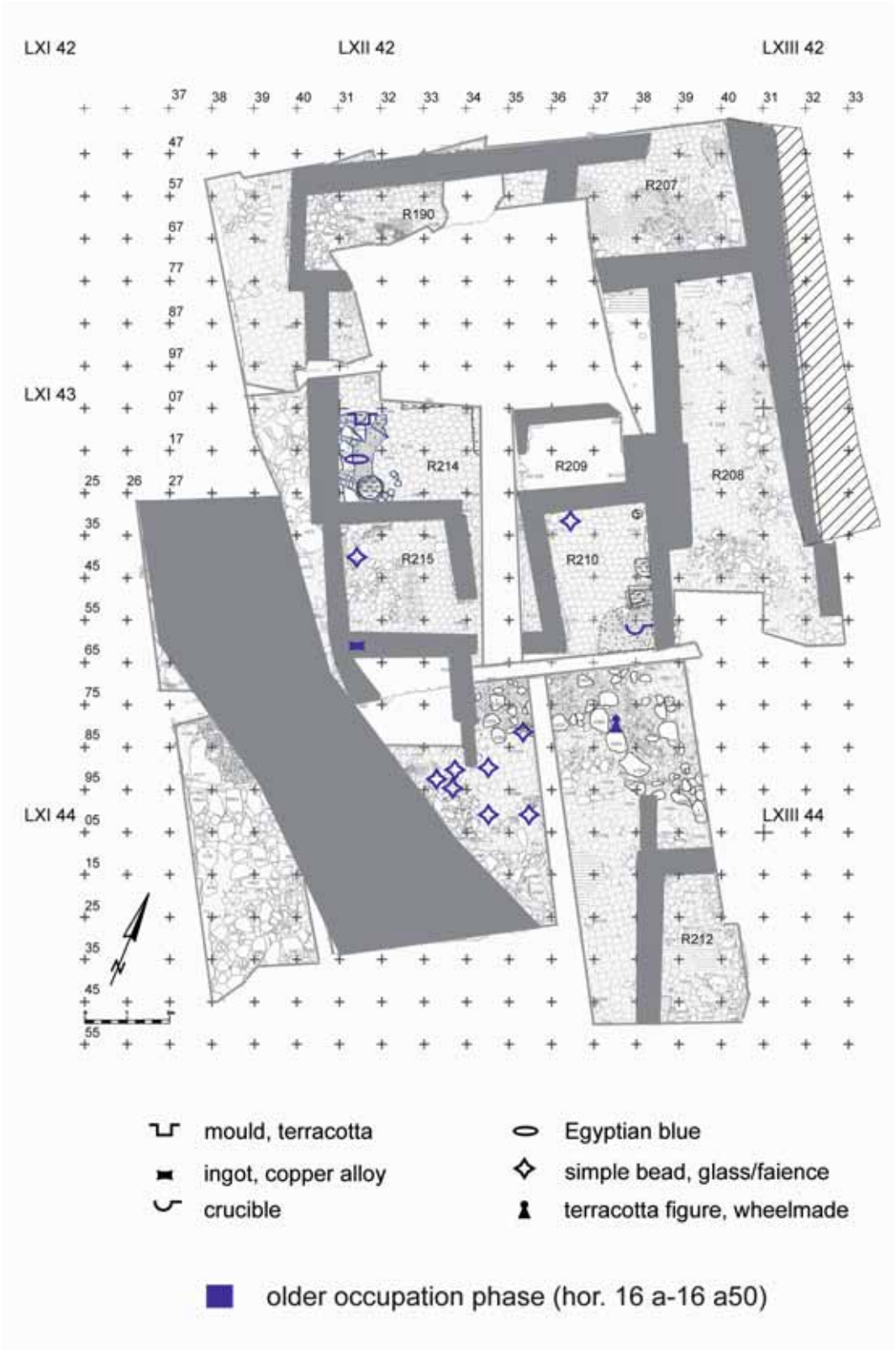

Fig. 3. Schematic plan of LH IIIB Middle complex with exotica and finds indicating metal working and ritual activities plotted, phase 1, hor. 16 a-16 a50.

probably a furnace[69] in Room 210; one crucible[70] associated with that furnace in Room 210; an Aeginetan cooking pot,[71] likely an installation for metallurgical activities, in Room 210; one grinding stone[72] nearby; two thirds of a wheelmade terracotta figure immediately south of Room 210;[73] and half of a miniature cup in the north-east corner of Room 215.[74]

The people, active in this building, must have conducted pyrotechnological activities that became visible to us in the production waste (slag), the mould and the crucible as well as such installations as the hearth in Room 214 and probably the furnace in Room 210. These remains thus allow us to identify Rooms 210, 214 and 215 as metallurgical workshops. In Room 214, where artisans may have been casting javelin heads, they likely discarded the mould fragment as refuse and the same probably holds true for the slag deposition in Room 210 where they were melting bronze. The Aeginetan cooking pot that was set into the floor of Room 210 forms a good example of the creativity with which artisans changed the function of objects when needed in a different setting. We believe that instead of functioning as a cooking pot, the vessel was probably used as a container for water and was thus integrated in the pyrotechnological activities carried out in this room. Moreover, although imported from the island of Aegina[75] and hence not a local product, the former cooking pot also highlights that it probably did not retain a clearly foreign connotation in its secondary context, since such cooking pots were being imported for more than a century. Although people were probably aware of the fact that these pots were not produced in the Argolid, it seems that their common occurrence in Tiryns precludes a perception of such vessels as exotic. Instead, people probably valued them for their purely practical superior thermal properties.

In contrast to this, a closely intertwined web of both practical and symbolic activities is recognized in the hiding of a bronze ingot (weighing approximately 20 kg) in the southern wall of Room 215, the presence of a large wheel-made figure immediately south of Room 210, likely set up in Room 210 to protect the pyrotechnological processes,[76] and the well-preserved miniature cup in Room 215, once perhaps used for libations. It is also curious to find that most of the glass beads are scattered in the open area south of the building and are thus not closely associated to either the hearth in Room 214 or the furnace in Room 210 that constitute the main artisanal activity areas. However, these beads cannot be interpreted as the remains of a lost necklace, because, although they are spatially confined, they occur at different elevations. They may perhaps be interpreted as votive beads once associated with the large figure[77] and thus also connecting symbolic aspects with production processes. Especially the bronze ingot, the Egyptian blue lump and the glass beads merit a closer look since they offer a good example of the context-dependency when we investigate what precisely constitutes the exotic character of these finds, and how the perception of their constituent materials/components may have changed in the course of their object biography.

Prior to making and bringing the bronze ingot to Tiryns, some artisans were mining and smelting ore elsewhere (or they recycled bronze scrap) since there is no evidence for ingot production at Tiryns. Since we assume that these first steps in the process of producing metal items, possibly javelin heads,[78] were carried out elsewhere, it is equally possible that the artisans, responsible for those first steps in this production process, may have been aware of a wide range of subsequent products that could evolve out of the ingots they initially produced.

Egyptian blue as a man-made pigment has been discussed at length by various specialists[79] and without summarizing

[69] TN 804 = furnace Nr. 24 in Room 210; LXII 43/47 Ofl. XIV a13.63 + LXII 43/48 a.13.97, hor. 16 a5–16 a7, Kilian 1988, 126, 135 fig. 31. The furnace is not documented on the stone plan of the older occupation phase, see Kilian 1988, fig. 36 (after p. 138). However, the find of a crucible and slag nearby indicate that the furnace was probably already in use during horizons 16 a1–16 a50, i.e. in the older occupation phase, see also Rahmstorf 2008, 271.

[70] TN 648. Find spot: LXII 43/57 XIV R210 + LXII 43/58 a13.54 (two joining fragments), hor. 16 a4 + hor. 16 a50–16a 5; Kilian 1988, 126, 135 fig. 32; Rahmstorf 2008, 84–85 cat. no. 1809, pls. 37,5, 91,1. Again, Kilian only mentions the crucible in his description of the younger occupation phase. However, according to his unpublished stratigraphic tables the find falls squarely within his hor. 16 a4, which date is also followed by Rahmstorf 2008, 84.

[71] Aeginetan cooking pot MN 30804; LXII 43/28 Ofl. XVI a13.25 R210, hor. 16 a2; Kilian 1988, 126.

[72] TN 776 is a limestone grinding stone; LXII 43/28 Ofl. XVI, hor. 16 a2.

[73] TN 1197, find spot: LXII 43/77 Ofl. XVIII, hor. 16 a3 + LXI 44/28 IIc, unstratified + LXI 41/89 VIb, hor. 21 a0 + 71/208 III, unstratified; Vetters 2009, DB-Nos. 837 + 2083 + 2084 + 2085; the broken figure was found on the surface of the alley immediately south of Room 210; the stem that approximately constitutes half of the figure is clearly stratified; two further, joining fragments of the torso came to light in later strata; Vetters 2011a, 39–41 figs. 2.2 bottom; 2.3.

[74] TN 1094, find spot: LXII 43/33 XVIa R215, hor. 16 a4; Damm 1997, 297 M411, pl. 27 M411. Only the cited examples constitute well preserved miniature vessels. The area features numerous additional small sherds of miniature vessels and fragments of terracotta figurines that, however, do not provide evidence for primary deposition.

[75] See Lindblom 2001, 41 for the export of Aeginetan cooking pots from the start of the Late Mycenaean period and the peak of Aeginetan pottery production in the Mycenaean period. From LH IIIB to LH IIIC Early, the export of Aeginetan pottery was limited to cooking pots, Lindblom 2001, 117.

[76] Kilian 1992, 15; Vetters 2009, chapter V.3.3; 2011a, 39–41.

[77] For the association of beads and figurines see Tzonou-Herbst 2002, 206–218.

[78] Vetters & Brysbaert forthcoming.

[79] See e.g. Kakoulli 2009 for a recent but out of date overview on Greek Bronze Age Egyptian blue occurrences.

this, suffice to state that this pigment may be named as the material-connecting-node in professional and possibly also social networks between glass workers, metal smiths (*ku-wa-no-wo-ko-i* and *ka-ke-we* as recorded in the Linear B-texts), painters and plasterers. The glass workers can produce the intense blue colour of the pigment by obtaining left-over copper bits from the smiths (too small or insignificant for their own production line). These recycled copper or bronze bits (see the Discussion section below) may subsequently gain in value again when mixed in with the glassy substance in producing the deep blue pigment. The pigment then links the glass makers to the wall painters, who would use the pigment in their paintings.

Allowing the bronze ingot and the Egyptian blue to be handled by their respective producers highlights that this case-study/phase consisted of partially worked materials that eventually would result in finished products. These materials are thus left-overs from which certain processes can be understood. These processes clearly crossed over but not just on a material level. It was by dissecting the finds in such a way that we came to realize that some characteristics of the exotica were represented, but not all. In the case of the bronze ingot, the initial materials were likely imported (*traditionally* labelled as exotic). Once such items arrived in the Tirynthian workshop, many subsequent activities may have been carried out *in situ* before the completed item was ready. The processes required to produce Egyptian blue prove even more complex (see the Discussion section below). Dissecting these finds illustrates both the physical/material and, most importantly, the human and social cross-overs and strategies that were at work in producing the items we study and the left-overs we have analysed, as well as their context-dependent value. While the tiny copper bits may have lost much of their value for the metal smiths, they may have regained crucial value for the glass makers who needed precisely this ingredient to make their beautiful deep blue pigment, a material most often employed on wall paintings of this period.

1B. In the next occupation phase[80] (*Fig. 4*) people did not change the architectural layout of this building and more finds and features of interest were uncovered (stratigraphic horizons 16 a5–17 a0, see *Table 4* for non-local items). These include three crucible fragments[81] in the open space south of Room 210; several fragments of burnt painted plaster[82] found inside the furnace and an adjacent shallow clay-lined pit employed as a working surface in Room 210; lead scrap concentrations in several areas; bronze scrap and slag from Room 210[83] and in the open space south of it; two locally-made wall bracket[84] fragments south of Room 210, and one potentially Cypriot wall bracket fragment from the immediately superimposed levelling layer above the destruction level, probably a residual find; glass beads in several rooms and the open area to the south; a whetstone in Room 215;[85] fragments of torch holders[86] in Room 215 and an almost complete one in corridor Room 211 in the destruction debris and the superimposed layer; an ivory appliqué in the shape of a column in the destruction layer of Room 190, a burnt ivory chip west of the room and an ivory rosette in the same open area, but in the levelling layer above the destruction layer and thus not well stratified; a concentration of well-preserved animal and group figurines in Room 214 respectively Room 190[87] and in the same area a large fragment of a miniature cup;[88] and a Canaanite amphora fragment, a so-called lead model of a

[80] Kilian 1988, 126–133; Rahmstorf 2008, 272–273 pl. 134.

[81] TN 649, find spot: LXII 43/84 XVI, hor. 16 a6–16 a7; Rahmstorf 2008, cat. no. 1808, pls. 37,3, 91,1; TN 650, find spot: LXII 43/66 XV grau b14.06, hor. 16 a6–16 a7; Rahmstorf 2008, cat. no. 1810, pls. 37,6, 91,1; TN 654, find spot: LXII 43/66 XIVa grau, hor. 17 a0; Rahmstorf 2008, cat. no. 1811, pl. 38,4.

[82] Due to problems in the stratigraphic sequencing of the furnace TN 804 (see above), it cannot be established with certainty that the plaster fragments belong to the second use phase in Room 210. However, following Kilian's description, it seems more prudent to assign them to horizons 16 a5–16 a7 than to the earlier occupation phase, i.e. horizons 16 a3–16 a4.

[83] The same stratigraphic problem already mentioned in the case of the burnt plaster fragments associated with the furnace holds true for the bronze scrap as well.

[84] On wall brackets in general see Panitz-Cohen 2006; Rahmstorf 2008, 91–111. The most common interpretation of these objects to date is that they may have served as lamps or incense burners.

[85] TN 706, find spot: LXII 43/33 XVc, hor. 16 a7–17 a0; Rahmstorf 2008, cat. no. 1258, pls. 69,17, 94,4.

[86] On torch holders see Kilian 1986; Rahmstorf 2008, 111–121.

[87] TN 1113, find spot: LXII 42/71 XIVa a13.49 R214, hor. 16 a7 + LXI 42/69 XIVa, hor. 16 a7 + LXII 42/71 a13.53, hor. 16 a7; Vetters 2009, DB-Nos. 653 + 2005 + 2006; TN 1114, find spot: LXII 42/71 XIVa b13.49, hor. 16 a7; Vetters 2009, DB-No. 654; TN 1115, find spot: LXII 42/71 XIVa c13.51 R214, hor. 16 a5; Vetters 2009, DB-No. 655; TN 1117, find spot: LXII 42/61 XV a13.42 R190, hor. 16 a5–16 a7; Vetters 2009, DB-No. 657; TN 1118, find spot: LXI 42/72 XV a13.42 R190, hor. 16 a7 + LXI 42/70 XVI, hor. 16 a7; Vetters 2009, DB-Nos. 658 + 1208; Vetters 2009, chapter V.3.3; 2012, 35.

[88] TN 1049, find spot: LXII 42/57 XII + LXII 42/59 XII, hor. 16 a7–17 a0; Damm 1997, 293 M376, pl. 25 M376. A completely preserved miniature cup was found in the open area south of Room 210: TN 1047, find spot: LXII 43/95 XVI, hor. 16 a6; Damm 1997, 296 M404, pl. 27 M404. Another well-preserved miniature cup was probably also deposited in the open area, although its joining sherds are much more widely spread: TN 1048, find spot: LXII 43/96 XV grau, hor. 16 a6–16a7 + LXII 44/06 XVIIb (hor. 16 a4 and younger, disturbed area) + LXII 44/28 XIVa grau, hor. 16 a6–16 a7 + LXII 44/19 XII, hor. 17 a0–19 b0 + LXI 42/90 X, hor. 17 a0; Damm 1997, 288 M323, pl. 21 M323. There are numerous additional smaller figurine fragments and sherds of miniature vessels that are not evaluated here, because it seems most probable that due to their extent of preservation they have been redeposited and

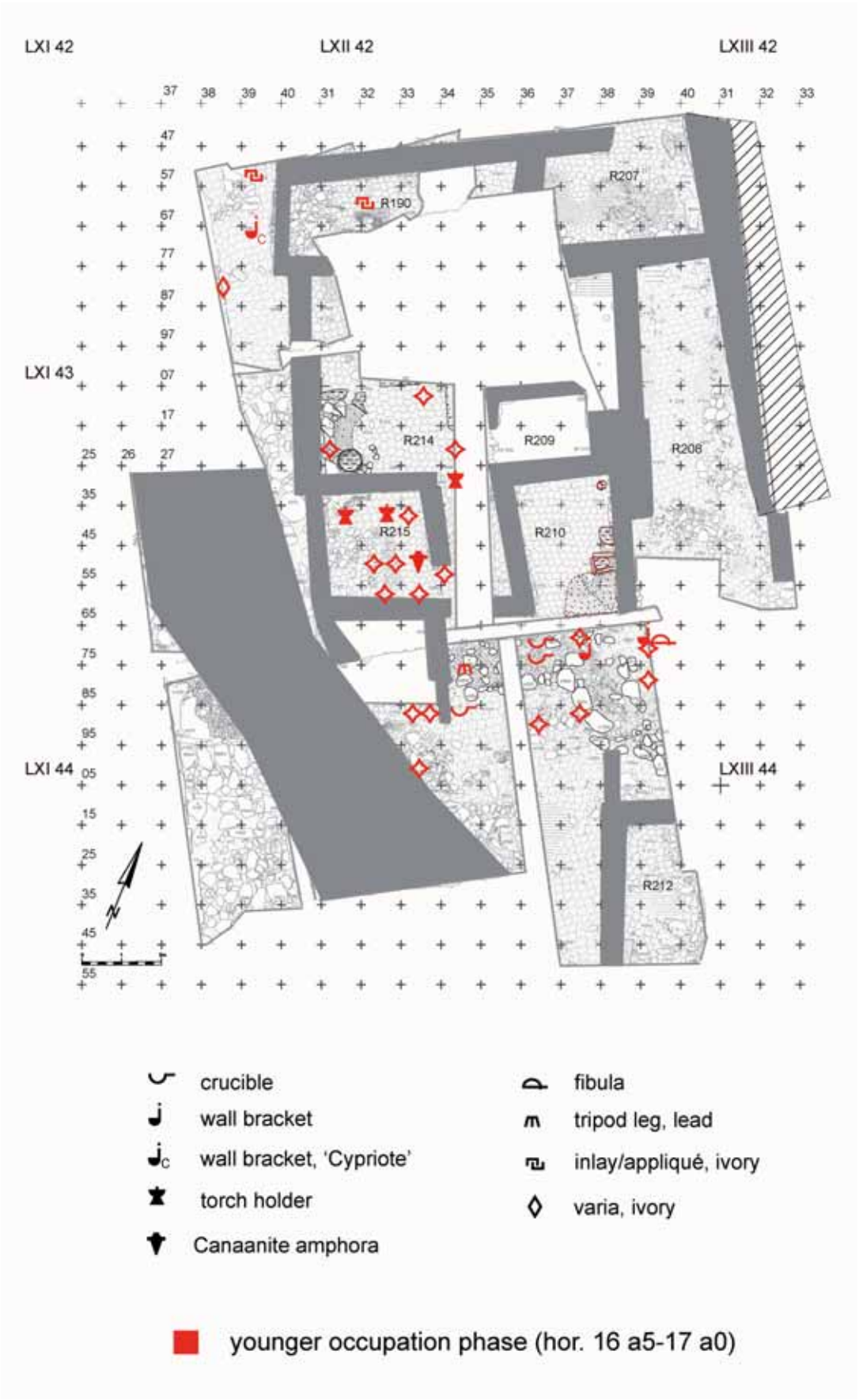

Fig. 4. Schematic plan of LH IIIB Middle complex with exotica finds plotted, phase 2, hor. 16 a5-17 a0.

Table 4. Lower Citadel Southwest, case study 1B—non-local materials or components in the LH IIIB Middle terrace house during the second occupation phase (stratigraphic horizons 16 a5-17 a0).

TN-number	*Find spot*	*Description*	*Stratigraphic horizon*	*Bibliography*
TN 795	LXII 43/47 b13.70 Nr. 24 R210	painted plaster fragment	hor. 16 a3-16 a7	
TN 797	LXII 43/48 XV a13.62 Nr. 24 R210	painted plaster fragment	hor. 16 a3-16 a7	
TN 798	LXII 43/48 XV a13.62 Nr. 24 R210	painted plaster fragment	hor. 16 a3-16 a7	
TN 962	LXII 43/58 XIV Nr. 24 R210	painted plaster fragment	hor. 16 a4-16 a7	
TN 972	LXII 43/48 XV a13.62 Nr. 24 R210	painted plaster fragment	hor. 16 a3-16 a7	
TN 719	LXII 43/03 XVe a13.67	lead lump	hor. 16 a6-16 a7	
TN 736	LXII 43/22 XV a14.06	lead spill	hor. 17 a0	
TN 750	LXII 43/23 XVf a13.56	lead lump	hor. 16 a6-16 a7	
TN 730	LXII 43/36 XIII a13.83 R210	lead clamp	hor. 17 a0	
TN 727	LXII 43/95 XVI a13.61	lead strip	hor. 16 a6-16 a7	
TN 729	LXII 43/85 XV grau a14.04	lead casting residue?	hor. 16 a7-17 a0	
TN 742	LXII 43/94 XVI a13.59	lead spill	hor. 16 a6-16 a7	
TN 749	LXII 43/83 XV	lead clamp or sheet?	hor. 17 a0	
TN 687	LXII 43/47 Nr. 24 R210	bronze scrap	hor. 16 a3-16 a7	Rahmstorf 2008, cat. no. 304; Kilian 1988, 126
TN 761	LXII 43/46 XIIIa a13.61 R210	bronze scrap	hor. 16 a7	Rahmstorf 2008, cat. no. 320
TN 823	LXII 43/47 XIIIa a13.61 Nr. 24 R210	bronze hook	hor. 16 a5-16 a7	Rahmstorf 2008, cat. no. 443
TN 764	LXII 43/48 XV b13.62 Nr. 24 R210	slag	hor. 16 a3-16 a7	Rahmstorf 2008, cat. no. 332
TN 787	LXII 43/47 XV a13.42	slag	hor. 16 a3-16 a7	Rahmstorf 2008, cat. no. 1778
TN 828	LXII 43/48 XV c13.62 Nr. 24 R210	slag	hor. 16 a3-16 a7	Rahmstorf 2008, cat. no. 1779
TN 765	LXII 43/58 XIV a13.55 Nr. 24 R210	slag	hor. 16 a5-16 a7	Rahmstorf 2008, cat. no. 327
TN 756	LXII 43/76 XV grau b14.00	bronze wire	hor. 16 a7-17 a0	Rahmstorf 2008, cat. no. 446
TN 757	LXII 43/84 XV a14.17	bronze wire	hor. 16 a7-17 a0	Rahmstorf 2008, cat. no. 447
TN 759	LXII 43/76 XV grau a14.00	bronze scrap	hor. 16 a7-17 a0	Rahmstorf 2008, cat. no. 444
TN 760	LXII 43/88 XVagrau a14.01	bronze scrap	hor. 16 a7-17 a0	Rahmstorf 2008, cat. no. 441
TN 763	LXII 43/89 XVI a13.86	bronze scrap	hor. 16 a7	Rahmstorf 2008, cat. no. 326
TN 643	LXII 43/67 XV	wall bracket fragment	hor. 16 a7-17 a0	Rahmstorf 2008, cat. no. 1821, pls. 39,4 & 91,2
TN 644	LXII 43/69 XV	wall bracket fragment	hor. 16 a7-17 a0	Rahmstorf 2008, cat. no. 1828, pls. 41,4 & 91,4; Kilian 1988, 128, fig. 24,4
TN 708	LXI 42/59 XI c14.15 + LXI 42/69 XII	2 joining wall bracket fragments	hor. 17 a0	Rahmstorf 2008, cat. no. 1829, pls. 40,1 & 91,3; Kilian 1988, 128, fig. 24,6
TN 788	LXII 43/03 XVg a13.50	simple glass bead	hor. 16 a7	Rahmstorf 2008, cat. no. 1935, pl. 84,9
TN 789	LXII 43/11 XV b14.10	simple glass bead	hor. 17 a0-19 b0	Rahmstorf 2008, cat. no. 1938, pl. 84,12
TN 904	LXII 43/14 XIVa a14.14	simple glass bead	hor. 17 a0	Rahmstorf 2008, cat. no. 1948, pl. 84,22
TN 664	LXII 43/53 XVe a13.75	simple glass bead	hor. 16 a7	Rahmstorf 2008, cat. no.1946, pl. 84,20
TN 665	LXII 43/42 XVf a13.62	simple glass bead	hor. 16 a7	Rahmstorf 2008, cat. no. 1937, pl. 84,11
TN 678	LXII 43/44 XVc a13.90	simple glass bead	hor. 16 a7-17 a0	Rahmstorf 2008, cat. no. 1955, pl. 84,29
TN 790	LXII 43/52 XVb a13.98	simple glass bead	hor. 17 a0	Rahmstorf 2008, cat. no. 1939, pl. 84, 13
TN 791	LXII 43/42 XVb a13.97	simple glass bead	hor. 17 a0	Rahmstorf 2008, cat. no. 1941, pl. 84,15
TN 912	LXII 43/33 XV a14.09	simple glass bead	hor. 17 a0	Rahmstorf 2008, cat. no. 1942, pl. 84,16
TN 663	LXII 43/83 XVI c13.54	simple glass bead	hor. 16 a6-16 a7	Rahmstorf 2008, cat. no. 1943, pl. 84,17
TN 676	LXII 43/67 XV grau b14.04	simple glass bead	hor. 16a7-17 a0	Rahmstorf 2008, cat. no. 1951, pl. 84,25
TN 677	LXII 43/79 XVII a13.68	simple glass bead	hor. 16 a5	Rahmstorf 2008, cat. no. 1954, pl. 84,28

TN 679	LXII 43/83 XVI a13.59	simple glass bead	hor. 16 a5-16 a7	Rahmstorf 2008, cat. no. 1956, pl. 84,30
TN 682	LXII 43/87 XVIIIb a13.38	simple glass bead	hor. 16 a5	Rahmstorf 2008, cat. no. 1959, pl. 84,33
TN 685	LXII 43/93 XVII a13.65	simple glass bead	hor. 16 a5	Rahmstorf 2008, cat. no. 1964
TN 792	LXII 43/86 XIII a14.20	simple glass bead	hor. 17 a0	Rahmstorf 2008, cat. no. 1962, pl. 84,36
TN 886	LXII 43/69 XIII a14.32	simple glass bead	hor. 17 a0	Rahmstorf 2008, cat. no. 1936, pl. 84,10
TN 661	LXII 43/32 XVf a13.57	fragment of torch holder	hor. 16 a7	Rahmstorf 2008, cat. no. 2353, pls. 42,3 & 91,5; Kilian 1986, 155, fig. 1,8
TN 802	LXII 43/31 XVf	fragment of torch holder	hor. 16 a7	Rahmstorf 2008, cat. no. 2375, pl. 45,10; Kilian 1986, 158, fig. 2,30
TN 658	LXII 43/24 XVb a14.14	fragment of torch holder	hor. 16 a7-17 a0	Rahmstorf 2008, cat. no. 2365 pls. 43,5, 91,6; Kilian 1986, 157 fig. 2,20
TN 923	LXII 42/52 XIc a13.66	ivory appliqué in the shape of a column	hor. 16 a7	Krzyszkowska 2005, 204, cat. no. 18, pl. 2,18; Kilian 1983, 300, fig. 24,1; 311
TN 821	LXI 42/78 XIV	burnt ivory chip	hor. 16 a7	
TN 956	LXI 42/49 X a14.19	ivory plaque in the shape of a rosette	hor. 17 a0-19 b0	Krzyszkowska 2005, 204, cat. no. 19, pls. 2,19 & 619
TN 775	LXII 43/43 XIV	fragmentary Canaanite amphora	hor. 17 a0-19 b0	Kilian 1988, 129, fig. 25,12
TN 829	LXII 43/74 XIIIa a14.12	fragmentary lead model for tripod leg	hor. 17 a0-19 b0	Kilian 1983, 299, fig. 22,2, 307-308; Kilian 1984, 56-57, 72, fig. 2 (right)
TN 827	LXII 43/69 Ofl. XIVa a13.96	bronze violin bow fibula	hor. 17 a0	Kilian 1985, 149, 164, fig. 2, VA1; Rahmstorf 2008, cat. no. 688

miniature tripod leg and a violin bow fibula in the layer above the destruction layer.[89]

That metal smiths continued to use this space as a metallurgical workshop can be derived from the fact that crucibles, the furnace and the bronze scrap were left behind in Room 210. In contrast, ivory carvers cannot be identified based on the ivory fragments found in Room 190 and immediately west of it. Despite their Mycenaean motifs they were likely not crafted in these premises because no production waste was found. However, they are spatially associated with another probably imported item, the "Cypriot" wall bracket. Glass beads are concentrated in Room 215 and again in the open area south of the building. Since the central hole of a simple bead found in Room 215 was not completely pierced through, this example may have constituted a waste product, but any other wasters pointing to glass bead manufacture are missing. Handmade animal and oxcart-group figurines in the entrance area of Room 214/Room 190 contrast with the wheel made female figure in the previous phase and apparently represent a specific selection of types. Closely associated with the figurines is a miniature cup that may have formed a set along with the figurines, once used in ritual practices connected with the protection of the entrance as a liminal sphere.[90] As wall brackets were apparently also used in ritual rather than in purely utilitarian practices,[91] it seems plausible that local and foreign ritual practices were amalgamated or carried out alongside one another in the building.

Also, in this second phase, several finds that were closely associated spatially, such as local wall brackets and the bronze violin-bow fibula,[92] indicate that the artisans were familiar with items and practices that are very uncommon or even absent from other Mycenaean palatial workshops. Moreover, several items or their constitutive components were imported: glass beads and ivory fragments (raw material import), a Cypriot wall bracket (object made elsewhere and imported), a Canaanite amphora (object made elsewhere and imported),

thus only provide very indirect evidence for ritual practices connected to artisanal activities in this area.

89 Traditionally, the amphora, the tripod leg and the fibula have not been associated with the LH IIIB Middle building but just been vaguely ascribed to the debris layer that formed above the building and contained material from the end of the LH IIIB Middle phase to the LH IIIC Early phase. This material is not well stratified, since the subsequent open area does not feature distinct super-imposed floor or walking horizons on top of the LH IIIB Middle phase and is only sealed by architectural remains in the early post-palatial period. Thus, the finds mentioned have been widely dated between the LH IIIB Middle phase to the beginning of the LH IIIC period. However, the concentration of these non-local artefacts (two of them indicating Eastern Mediterranean influences—once an actual import, once an imitation of a type so far only known from Cyprus—one probably originating in the Western Mediterranean), fit well into the picture of international contacts (as evidenced by the import of the bronze ingot) of people working in the LH IIIB Middle building, although the items have come to light in a layer above the actual building.

90 Kilian 1988, 133; Kilian 1992, 14, 21; Vetters forthcoming.

91 Panitz-Cohen 2006.

92 Although an association of these exotica in their original use-context cannot be established, at least their final deposition just south of Room 210 may indicate that they were used or re-used in the metallurgical activities of that room.

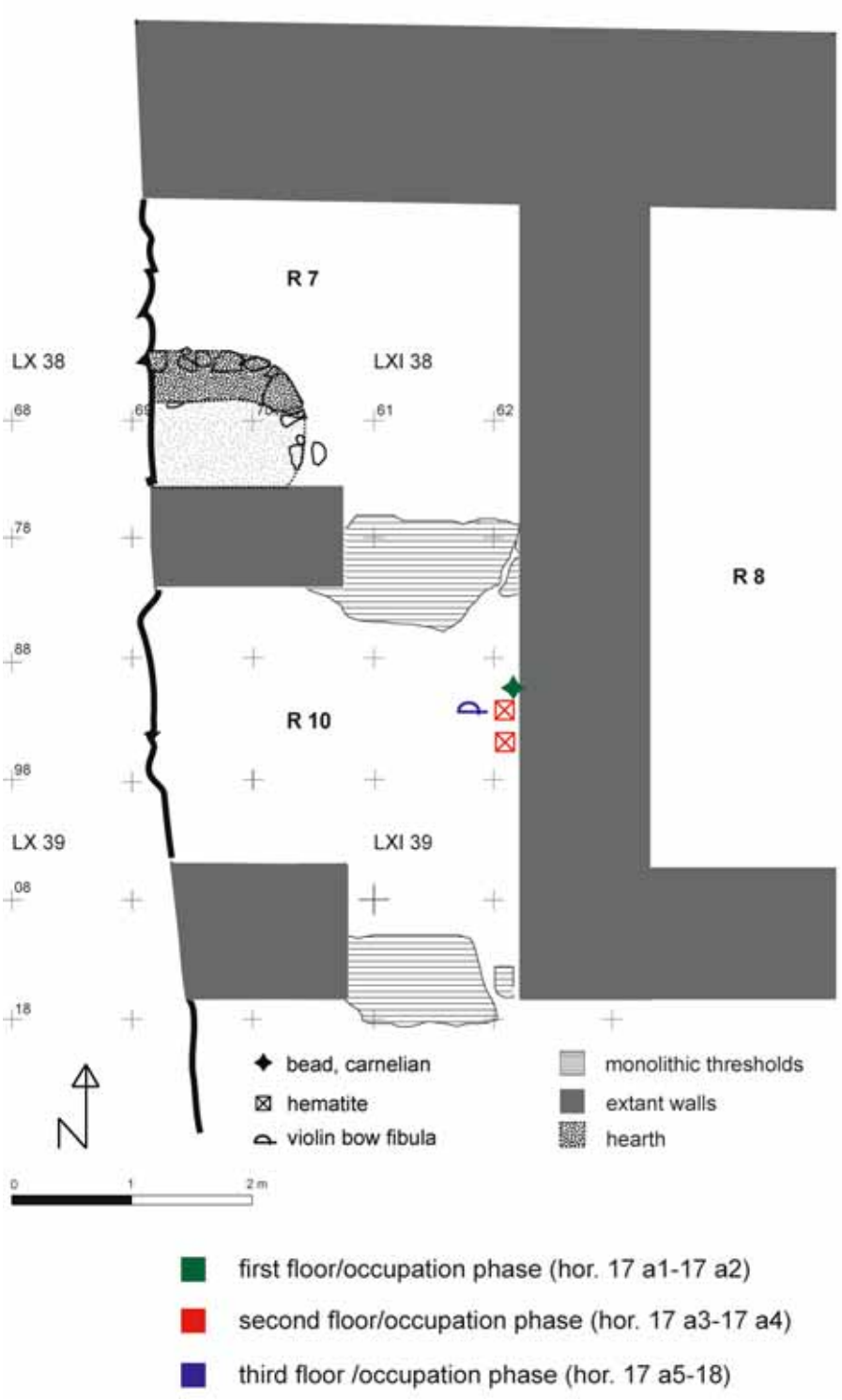

Fig. 5. Schematic plan of LH IIIB Developed–Final Building Complex A and Room 10 with exotica finds plotted (Tiryns-archive; with kind permission by Joseph Maran, our modification).

potentially the torch holders' contents[93] (material produced elsewhere and imported), the miniature lead tripod leg (raw material imported from elsewhere, but potentially modelled on site yet imitating a foreign object and design), and the bronze violin bow fibula (object probably made elsewhere and imported). The violin bow fibula, a type known mostly from Italy[94] will be discussed in the project's final publication. Suffice to state that we have currently no evidence to suggest that this type of fibula was produced in Tiryns and was thus likely imported as a finished object. It is exactly the close spatial association and dense concentration of such items that suggest that these artisans were involved in or familiar with non-local practices while conducting their metallurgical activities.

2. Room 10 (*Fig. 5*) of Building I in Building Complex A[95], situated north of the LH IIIB Middle Building in the Lower Citadel, dates to LH IIIB Developed/Final and overlaps with the occupation and activities of Building XI (see below, case study 3B). Materials of interest came to light on three occupation floors (see *Table 5* for non-local materials). Within the LH IIIB Developed layer (stratigraphic horizon 17 a1–17 a2) were excavated three serpentinite *conuli*, a carnelian bead, three obsidian flakes, a bone spatula, a lump of lead (perhaps part of an ingot), a lead sheet, lead clamp fragments, a fragmentary bronze implement, perhaps part of a violin

[93] Rather than the torch-holders themselves. The residue preserved in one of them has been analysed in the early 1980s as probably containing coniferous resin, see Kilian 1986, 165–166.
[94] For Italian parallels see Kilian 1985, 162.
[95] Kilian 1981, 175–177 with fig. 27, esp. 176, see also Rahmstorf 2008, 252–253, pls. 113–114.

Table 5. Finds from Room 10 in Building Complex A in the western-central Lower Citadel during the phases LH IIIB Developed–Final (hor. 17 a1-18).

TN-number	*Find spot*	*Description*	*Stratigraphic horizon*	*Bibliography*
TN 832	LX 38/79 Xa	obsidian flake	hor. 17 a1	
TN 600	LX 38/100 Xa a12.96 R10	lead lump, perhaps part of an ingot?	hor. 17 a1	
TN 831	LX 38/89Xb	obsidian blade	hor. 17 a1	
TN 830	LX 38/89 Xc R10	obsidian flake	hor. 17 a1	
TN 621	LXI 38/81 X a13.04	bone awl or spatula	hor. 17 a1	Rahmstorf 2008, cat. no. 1308, pls. 74,6 & 97,6
TN 597	LXI 38/81 Xa	lead clamp with sherd	hor. 17 a1	
TN 601	LXI 38/81 Xa a 12.96 R10	bronze, unidentified	hor. 17 a1	Rahmstorf 2008, cat. no. 503
TN 616	LX 38/89 X a13.03 R10	Serpentinite *conulus*	hor. 17 a1-17 a2	Rahmstorf 2008, cat. no. 13, pls. 47,36 & 91,10
TN 617	LX 38/90 X R10	Serpentinite *conulus*	hor. 17 a1-17 a2	Rahmstorf 2008, cat. no. 28, pls. 51,8 & 91,11
TN 614	LX 38/90 X a13.01 R10	fragmentary bronze implement, perhaps part of fibula	hor. 17 a1-17 a2	Rahmstorf 2008, cat. no. 385
TN 595	LX 38/90 X a13.02 R10	lead sheet	hor. 17 a1-17 a2	
TN 613	LX 38/90 X b13.09 R10	bronze arrow bolt	hor. 17 a1-17 a2	Rahmstorf 2008, cat. no. 632
TN 594	LXI 38/72 X a13.05	lead clamp?	hor. 17 a1-17 a2	
TN 619	LXI 38/81 X a13.00 R10	Serpentinite *conulus*	hor. 17 a1-17 a2	Rahmstorf 2008, cat. no. 56, pls. 51,40 & 91,11
TN 620	LXI 38/82 X a12.97 R10	carnelian bead	hor. 17 a1-17 a2	Rahmstorf 2008, cat. no. 2016, pl. 52,15
TN 624	LX 38/80 IXf a13.14 R10	marble spool	hor. 17 a3	Rahmstorf 2008, cat. no. 1248, pls. 68,2 & 94,3
TN 598	LX 38/90 IXf a13.19 R10	lead, prob. casting spill	hor. 17 a3	
TN 623	LX 38/99 IXf a13.18 R10	limestone mortar	hor. 17 a3	Rahmstorf 2008, cat. no. 1257, pls. 66,1 & 94,1
TN 622	LX 38/99 Ofl. X R10	clay pestle or stopper	hor. 17 a3	Rahmstorf 2008, cat. no. 2331. pls. 34,15 & 97,2
TN 618	LXI 38/81 IXf a13.14	spindle whorl of stone	hor. 17 a3	Rahmstorf 2008, cat. no. 239, pls. 4,18 & 89,4
TN 642	LXI 38/82 b13.13 R10	haematite	hor. 17 a3	Rahmstorf 2008, cat. no. 1764
TN 780	LXI 38/82 IXf R10	haematite	hor. 17 a3-17 a4	
TN 833	LXI 38/82 IXf R10	obsidian flake	hor. 17 a3-17 a4	
TN 615	LXI 38/81 IXe a13.20 R10	fragmentary bronze fibula	hor. 17 a4 or hor. 17 a5	Rahmstorf 2008, cat. nos. 383, 687; Kilian 1985, 149, fig. 2, III B3, 152, 162
TN 835	LX 38/89 IXa	obsidian blade	hor. 18	
TN 834	LX 38/90 IXc R10	obsidian flake	hor. 18	

bow fibula[96] and another unidentified bronze fragment and a bronze arrow bolt as well as two well preserved handmade female terracotta figurines.[97] Within the LH IIIB Developed layer (stratigraphic horizon 17 a3–17 a4) came to light a stone spindle whorl, a limestone mortar, a marble spool,[98] lead casting residue, two haematite lumps, a clay pestle and four terracotta figurine fragments.[99] Within the LH IIIB Final layer (stratigraphic horizon 17 a5–18) were found a bronze violin bow fibula[100] as well as a fragmentary obsidian blade and flake and three almost complete female terracotta figurines.[101]

[96] TN 614. If this wire fragment constitutes part of a fibula, then its diameter appears to be too small to constitute the missing part of fibula TN 615 from the same room and thus was probably not part of the latter.

[97] TN 1219, find spot: LX 38/89 X b13.04 R10, hor. 17 a2; Vetters 2009, DB-No. 89; TN 1220, find spot: LX 38/99 Xa a12.92 R10, hor. 17 a1; Vetters 2009, DB-No. 90. Two other, very fragmentary female figurines, TN 1215, find spot: LXI 38/72 X R10, hor. 17 a2, Vetters 2009, DB-No. 2123 and TN 1214, find spot: LX 38/90 X R10, hor. 17 a2; Vetters 2009, DB-No. 1529, and the fragment of an animal figurine, TN 1226, find spot: LXI 38/81 X b13.00 R10, hor. 17 a2, Vetters 2009, DB-No. 1126, represent in all probability redeposited material, see Vetters 2009, map 6.

[98] Originally of Early Helladic date, see Rahmstorf 2008, 253.

[99] Due to their state of preservation and types, however, these do not constitute clear-cut evidence for ritual use in this specific room; Vetters 2009, map 7. Especially the finds of this phase and the ash layers led Kilian (1981, 176) to assign the room a possible small-scale metallurgical function.

[100] TN 615. The stratigraphic assignment of this fibula is ambiguous; Rahmstorf 2008, 252 assigns it to horizon 17 a3–17 a4, which would fit Kilian's unpublished stratigraphic tables, where spit IXe corresponds to hor. 17 a4. Also, according to the find's elevation the fibula was found a few centimetres below the last palatial floor, i.e. in hor. 17 a4. Kilian 1985, 162, however, states that the fibula was found "auf dem Fußboden der letzten Nutzungsphase des Baues vor der großen Erdbebenkatastrophe und ist daher an das Ende von SH III B 2 zu datieren". According to the latter, the fibula should be assigned to the floor of hor. 17 a5.

[101] The figurines are all mended from two to three fragments: Vetters 2009, DB-No. 85 + DB-No. 1644; DB-No. 86 + DB-No. 87 + DB-No.

Clear indications for supporting the use of Room 10 as a workshop are lacking, but this is based purely on the absence of fixed installations and rather ambiguous finds.[102] There is, however, a large fireplace in the south-west corner of the neighbouring Room 7 to the north. Room 10 is a transit room, rather small and, as an interior room, appears not to have been very well aerated, but the copious ash found in the room indicates the use of fire.[103] The room's assemblage is distinguished by an uncommonly high number of well-preserved female figurines that have been interpreted as evidence for the ritual protection of craft activities in this room.[104] However, the reconstruction of specific artisanal practices in this room is ambiguous. Although the first floor assemblage contained the highest amount of metal objects, only the artefacts from the second floor actually provide evidence for raw materials (haematite), production waste (lead casting residue) and grinding or crushing tools (a mortar, a marble spool and a clay pestle). These finds potentially indicate craft activity and interlinked processes such as the grinding of small amounts of metalliferous pigments and the processing of (non-local) lead, two materials that may well have been derived from the same source since haematite is ubiquitous.[105]

The carnelian bead, the haematite and the violin bow fibula from Room 10 all have clear exotic characteristics. Though occurring on different floors, they all came to light within the same square metre, but are spatially separated from the well-preserved female figurines. Thus, despite the room's small size people may have been involved in various activities. This can be deduced from the rather structured deposition of different materials and objects. If the interpretation of the room's assemblage as evidence for small-scale metallurgical activities is accepted (working mainly in lead and perhaps producing small amounts of pigments), the occurrence of at least one fibula, a dress implement that is otherwise exotic in palatial layers, would provide an interesting parallel to the LH IIIB Middle example. Whether these dress accessories are to be tentatively connected to foreign artisans, remains an open question, especially since fibulae are commonly considered as a female dress implement, whereas metallurgical activities are traditionally seen as male-centred crafts. On the other hand, there is no need to assume that all activities within this room were strictly male-run. Pigment crushing and production may well have been in the hands of women and children too.[106]

Another (dress) accessory merits discussion as well: the miniscule carnelian bead found on the first floor. Carnelian as a material is not native to the Aegean but found in Egypt. It has been employed in the Aegean for seal stones since the Old Palace period in Crete.[107] The bead itself does not appear to be finished as it shows clear saw marks, suggesting that the material was imported, either as a half-worked bead or, more likely, as a raw material. Artisans may have intended to shape it locally into a bead (but never achieved this) or may have used it as a half-finished bead in a necklace anyway.[108] It is likely that the artisans did not conduct all the work on this bead in this specific room because its *chaîne opératoire* could not be entirely recovered there and no further beads, bead waste or other signs of bead production such as the necessary tools to shape them, were recovered during excavation.

3A.[109] In an open area with an oven[110] situated in the north of the Lower Citadel, slightly below Building XI,[111] dating to the earlier 13th century BC, thus chronologically corresponding partly to the LH IIIB Middle complex in the south-western part of the Lower Citadel, a small fragment of the first ostrich egg excavated in Tiryns was recognized[112] and has obvious exotic connections (*Fig. 6*). It is difficult to determine which specific activities people there may have conducted in the open area since clear boundaries of activity areas are missing and its relation to an enclosed space to the north, probably a room, is obfuscated by later, superimposed structures. So far it appears that the oven was not used to process metal since finds specifically indicating metallurgical activities are absent. The oven and ash associated with it are under analysis and may provide clues to precise activities in the future.

2039; DB-No. 93 + DB-No. 747; Vetters 2009, map 8; Vetters forthcoming.

[102] Kilian did not find a hearth or fireplace in this room, nor was one encountered in later excavations by the Greek Antiquity Service in the course of restoration works. Therefore, Rahmstorf 2008, 253 is cautious in identifying the room as a workshop area.

[103] The ashy layers encountered by Kilian, especially in horizon 17 a3–17 a4 or LH IIIB Developed, are accompanied by pottery which shows signs of such great heat exposure that some of it actually warped, Kilian 1981, 176, yet there are no sign of a larger conflagration, which suggests that the ash derived from human activity rather than a fire destruction.

[104] Vetters 2009, chapter V.5.2; forthcoming.

[105] Haematite was referred to as found and seen near several mine areas in the Laurion area by mineral collectors, see e.g. Wendel & Markl 1999. We like to point out, however, that, without having had the chance to consult this reference, we have no certainty whether haematite was also collected or mined from these locations as early as the Late Bronze Age.

[106] Brysbaert 2008, 152, 169, 171.

[107] Evely 2000, 153.

[108] See e.g. Hughes-Brock 1999, 290 who comments on the fact that some beads may have come in already half-worked, heat treated for colour enhancement on carnelian and agate or crust removal on amber; also more recently Philipps 2012 on the topic of repair, recycling and reuse of specific materials relating to jewellery-making.

[109] In case study 3A and 3B, figurines and miniature vessels were not included because they were too fragmentary to be considered as evidence for primary deposition close to their former place of use.

[110] Mudbrick oven TN 18; find spot: LXIII 35/21 VIF-VIη Nr. 46/03, hor. 15–16; Maran 2008, 39, fig. 3.

[111] Maran 2008, 38–39, fig. 3.

[112] Brysbaert 2013.

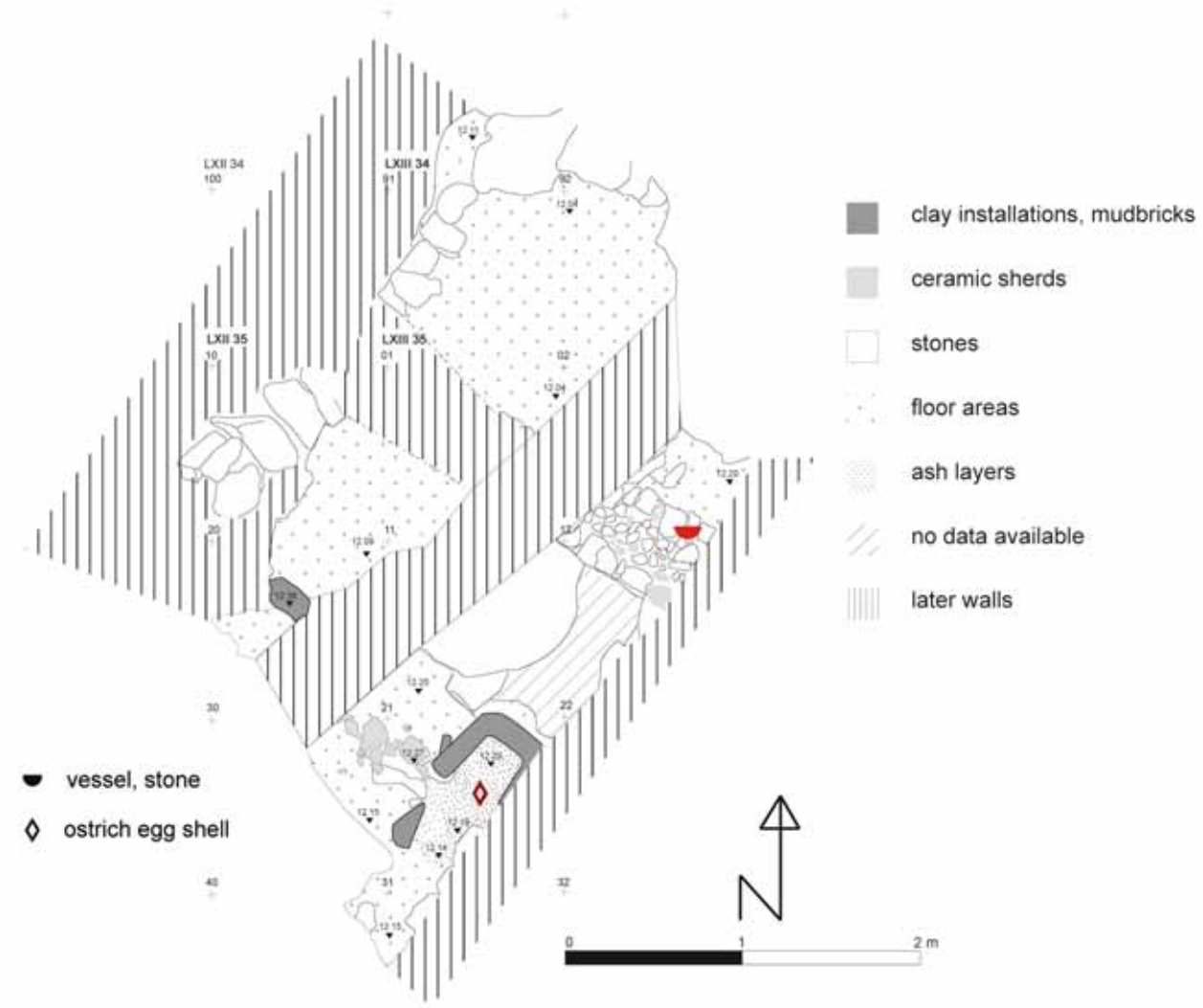

Fig. 6. Schematic plan of LH IIIB Early/Middle oven area with exotica finds plotted.

Finds in this area (see *Table 6*) were mainly obsidian blades and flakes, a chert flake, two radiolarite flakes or chips, a plaster fragment, two fragmentary circular modified sherds and an infant's tooth. In a pebble pavement or wall north of the oven a fragment of a stone vase was found, in secondary use as building material. Considering the find distributions in this area, the general image is of a common, domestic nature, despite the fragments of ostrich egg shell and of the stone vessel. Although the ostrich egg shell is burnt, its small size does not entirely preclude the possibility that it constitutes refuse stemming from its working or breakage elsewhere, since there are no further indications for the making of inlays in this area. However, the egg shell fragment need not have to be refuse of inlay making since it could also have been part of the fashioning of rhyta for which far less refuse would have been produced. Possibly a similar scenario could be sketched for the stone vessel fragment because it was clearly found in secondary use. However, the finds do shed some valuable light on the changing status or appreciation of exotica: the ostrich egg has been discussed at length in relation to its *chaîne opératoire* and its exotic nature elsewhere.[113] In sum, the ostrich egg itself was already worked and may have travelled for quite some time before it arrived in the Aegean. There, local specialized artisans may have finished it off with several other materials (faience appliqués, metal fixtures, gold foil, stone spouts[114]), either as

[113] Brysbaert 2013, 250–252.

[114] Several of these materials were certainly obtained from other artisans, indicating how such workers would have interacted again together to form the final outcome.

Table 6. All moveable finds from the LH IIIB Early/Middle open area in the northern tip of the Lower Citadel.

TN-number	*Find spot*	*Description*	*Stratigraphic horizon*	*Bibliography*
TN 1	LXIII 34/92 VIf	fragmentary circular modified sherd	hor. 15-16	
TN 2	LXIII 34/91 VIG a12.09	fragmentary obsidian blade	hor. 15-16	
TN 3	LXIII 34/92 VIG a12.24	obsidian blade fragment	hor. 15-16	
TN 4	LXIII 35/12 VIF a12.25	obsidian flake	hor. 15-16	
TN 5	LXIII 35/01 VIG b12.15	fragmentary obsidian blade	hor. 15-16	
TN 6	LXIII 35/12 VIF b12.25	obsidian, production waste	hor. 15-16	
TN 7	LXIII 35/12 VIη a12.09	obsidian, fragmentary crested blade	hor. 15-16	
TN 8	LXIII 35/21VIE b12.35	obsidian, preparation flake	hor. 15-16	Brysbaert 2013
TN 10	LXIII 35/21 VIη	fragment of ostrich egg shell	hor. 15-16	Brysbaert 2013
TN 11	LXIII 35/12 VIF c12.26	obsidian flake	hor. 15-16	
TN 12	LXIII 35/01 VIG a12.09	obsidian flake	hor. 15-16	
TN 13	LXIII 35/21 VIE c12.42 Nr. 46/03	obsidian flake	hor. 15-16	Brysbaert 2013
TN 14	LXIII 35/21 VIE a12.34	obsidian flake	hor. 15-16	Brysbaert 2013
TN 15	LXIII 35/11 VIF c12.24	chert flake	hor. 15-16	
TN 16	LXIII 35/02 VIG 12.22	obsidian, preparation flake	hor. 15-16	
TN 17	LXIII 35/01 VIF a12.27	obsidian blade fragment	hor. 15-16	
TN 20	LXIII 35/12 VIH a12.20	obsidian blade fragment	hor. 15-16	
TN 23	LXIII 35/21 VIF a12.26	premolar tooth of infant	hor. 15-16	Brysbaert 2013
TN 53	LXIII 35/02 VIG unter M10/02 Bst. 5/03	obsidian flake	hor. 15-16	
TN 54	LXIII 35/02 VIG unter M10/02 Bst. 5/03	obsidian flake	hor. 15-16	
TN 55	LXIII 35/02 VIG	obsidian flake	hor. 15-16	
TN 874	LXIII 35/11 VIF a12.25	plaster fragment	hor. 15-16	
TN 875	LXIII 35/02 VIH a12.24 Nr. 59/03	fragmentary stone vessel	hor. 15-16	
TN 876	LXII 35/40 VID a12.40	radiolarite chip	hor. 15-16	
TN 877	LXIII 35/11 VIF b12.24	fragmentary circular modified sherd	hor. 15-16	
TN 878	LXII 34/100 VID b12.38	obsidian blade fragment	hor. 15-16	
TN 879	LXII 35/30 VIF a12.28	radiolarite flake	hor. 15-16	
TN 880	LXIII 34/91 VIH a12.03	obsidian flake	hor. 15-16	
TN 881	LXII 35/10 VIG a12.17	obsidian flake	hor. 15-16	
TN 882	LXII 35/10 VIF a12.41	obsidian flake	hor. 15-16	
TN 883	LXII 35/20 VIF a12.34	obsidian flake	hor. 15-16	
TN 884	LXII 34/90 VIF 12.14	obsidian flake	hor. 15-16	

an ostrich egg rhyton, or maybe as an inlay piece. As such, it was suggested that several artisans, working some (great) distance apart, but likely having some knowledge of each other's work-related activities, formed the professional and social network in which the egg formed the material node between them.[115] Another point worth mentioning here is the use of non-local obsidian tools that appear to be completely integrated into the local material culture[116] and were probably preferred over the locally available chert examples because of superior functional properties, but were evidently not used as status markers.

3B. Building XI,[117] situated above the layer discussed in 3A, dates to the LH IIIB Final phase, i.e. just before the Mycenaean palatial collapse (*Fig. 7*). A range of finds and features were attested for this phase (see *Table 7*). Room 78a[118] contained a fireplace with two well-preserved wall brackets on its southern side, faience vessel fragments,[119] a relief bracket bead near the fireplace, an amber bead, a knob-shaped terracotta object with a gold foil tinsel adhering to it, another gold foil tinsel, copper alloy spills, an ivory rod with incised cuneiform signs,[120] and five copper alloy tools and implements as well as an andesite grinding stone and

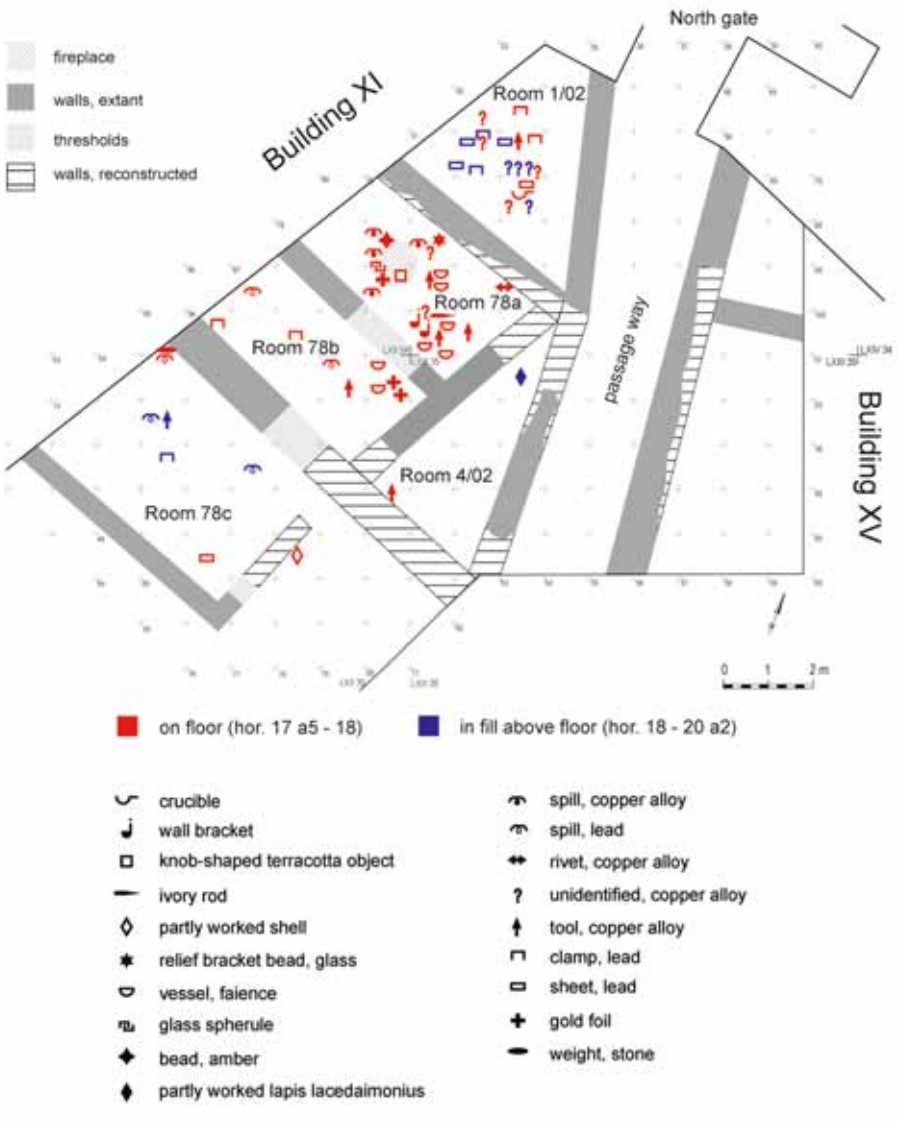

Fig. 7. Schematic plan of LH IIIB Final Building XI with exotica and finds indicating metal working or recycling plotted.

three obsidian blades.[121] Room 78b contained gold foil fragments, faience vessel sherds, three steatite *conuli*,[122] and a bone button-shaped attachment with incised decoration.[123] Room

[115] Brysbaert 2013, 250.
[116] For the predominant use of obsidian in tool kits on all major sites in the Argolid since the Early Helladic period see Newhard 2003.
[117] Maran 2008, 50–54; Brysbaert & Vetters 2010, 29–31.
[118] Several finds (TN 32, TN 33, TN 151, TN 179, TN 209) are difficult to assign stratigraphically to the floor assemblage, since their elevation would fall beneath the recorded floor levels of 12.80–12.86 metres above sea level (masl) (in the eastern part of the room) or rather in a pavement consisting of pebbles and small stones onto which the actual floor was built (between 12.85–12.94 masl in the western and 12.78–12.82 masl in the eastern part of Room 78a, see Maran 2008, 51).
[119] For further details see Kostoula & Maran 2012.
[120] See in detail Cohen *et al*. 2010.
[121] Six obsidian flakes were found as well.
[122] TN 47, find spot: LXII 34/99 IVa a12.90, hor. 17 a5, Rahmstorf 2008, 241, cat. no. 186, pl. 48,9; TN 48, find spot: LXII 34/100 IVb a12.81, hor. 17 a5, Rahmstorf 2008, 241, cat. no. 246, pl. 48,8); and an additional one from LXII 34/97 IV a12.98, hor. 17 a5, Rahmstorf 2008, 241, pl. 48,1.
[123] TN 196, find spot: LXII 35/08 IV a12.96, hor. 17 a5; Krzyszkowska 2005, 186, 203, no. 17, pl. 2,6. Furthermore, finds of non-local materials, i.e. several lead items as well as two obsidian flakes, and a copper alloy tool were found on the floor of Room 78b. Artefacts of local material

Table 7. LH IIIB Final Building XI in the northern tip of the Lower Citadel; non-local[1] finds.

[1] I.e. made from non-local materials or in foreign or hybrid techniques.

TN-number	*Find spot*	*Description*	*Stratigraphic horizon*	*Bibliography*
TN 22	LXII 34/100 IVb + LXIII 34/81 VI + LXIII 34/91 VI a12.90 + LXIII 34/91 VI + LXIII 35/01 VIA unter Fußboden	wall bracket	hor. 17 a5	Maran 2004a, 4, 8, fig. 9; Maran 2008, 51, 52, fig. 27; Kostoula & Maran 2012, 195, 216
TN 29	LXII 34/100 IVb + LXII 35/10 IVb + LXII 35/19 IVb + LXIII 34/91 VI	wall bracket	hor. 17 a5	Maran 2008, 51; Kostoula & Maran 2012, 195, 216
TN 207	LXIII 34/91 VI f12.81	faience vessel fragment	hor. 17 a5	Kostoula & Maran 2012, 199, locus 2.4, figs. 4, 8
TN 208	LXIII 34/91 VI g12.83	faience vessel fragment	hor. 17 a5	Kostoula & Maran 2012, 199, locus 2.2-3, figs. 4, 8
TN 209	LXIII 34/91 VIB c12.77	faience vessel fragment	hor. 17 a4-17a5	Kostoula & Maran 2012, 199, locus 2.5, figs. 4, 8
TN 210	LXIII 34/81 VIb c12.86	faience vessel fragment	hor. 17 a5	Kostoula & Maran 2012, 200, locus 2.6, figs. 4, 8
TN 211	LXIII 34/81 VIb b12.87	faience vessel fragment	hor. 17 a5	Kostoula & Maran 2012, 200, locus 2.7, figs. 4, 8
TN 160	LXIII 34/71 Ofl. VIA a12.86	glass relief bead	hor. 17 a5	Brysbaert & Vetters 2010, 130, 141, tab. 1
TN 58	LXII 34/80 IVb a12.80	amber bead	hor. 17 a5	Rahmstorf 2008, 241, cat. no. 2023, pl. 52,11
TN 57	LXII 34/90 IVa a12.86	knob-shaped terracotta object with gold foil tinsel adhering to it	hor. 17 a5	Kilian 1984, 56, 71, fig. 3,9; Rahmstorf 2008, 241, cat. no. 1786, pl. 35,10
TN 31	LXII 34/90 IVb a12.84	gold foil tinsel	hor. 17 a5	Rahmstorf 2008, 241, cat. no. 1739
TN 56	LXII 34/80 IVb a12.85	faience or glass spherule	hor. 17 a5	Rahmstorf 2008, 241, cat. no. 1916, pl. 85,51
TN 190	LXIII 34/91 VI d12.80	ivory rod	hor. 17 a5	Maran 2004a, 14, 25; Maran 2008, 52, fig. 29; Cohen *et al*. 2010
TN 32	LXIII 34/91 VI e12.79	copper alloy tool	hor. 17 a4-17 a5	
TN 33	LXIII 34/92 VI a12.79	copper alloy tool	hor. 17 a4-17 a5	
TN 38	LXIII 34/91 VIB b12.77	copper alloy, corroded sheet fragment	hor. 17 a5	
TN 70	LXIII 34/81 VIb e12.88 Profilabbau unter M 3/02	copper alloy chisel	hor. 17 a5	
TN 74	LXIII 34/83 VIA a12.93	copper alloy rivet	hor. 17 a5	
TN 151	LXIII 34/71 VIC a12.71	corroded amorphous copper alloy fragment, probably production waste	hor. 17 a4-17 a5	
TN 152	LXIII 34/71 VIC a12.71	copper alloy spill	hor. 17 a5	
TN 781	LXII 34/80 IVb a12.86	copper alloy spill	hor. 17 a5	Rahmstorf 2008, 241, cat. no. 1770
TN 782	LXII 34/80 IVb a12.88	copper alloy spill	hor. 17 a5	Rahmstorf 2008, 241, cat. no. 1774
TN 783	LXII 34/90 IVb a12.86	copper alloy spill	hor. 17 a5	Rahmstorf 2008, 241, cat. no. 1775
TN 19	LXIII 34/91 VI c12.83	andesite grinding stone	hor. 17 a5	Maran 2008, 51
TN 43	LXIII 34/81 VIa a12.80	obsidian blade	hor. 17 a5	Brysbaert & Vetters 2010, 130, 141, tab. 1
TN 46	LXIII 34/81 VI a12.90	obsidian blade	hor. 17 a5	Brysbaert & Vetters 2010, 130, 141, tab. 1
TN 179	LXIII 34/91 VIB f12.76	obsidian blade	hor. 17 a4-17 a5	
TN 40	LXIII 34/91 VIB	obsidian flake	hor. 17 a5	
TN 42	LXIII 34/81 VI b12.86	obsidian flake	hor. 17 a5	
TN 44	LXIII 34/91 VI	obsidian flake	hor. 17 a5	
TN 150	LXIII 34/82 Ofl. VIA b12.87	obsidian flake	hor. 17 a5	
TN 164	LXII 34/89 VIA a12.82	obsidian flake	hor. 17 a5	
TN 178	LXII 34/69 VIC a12.80	obsidian flake	hor. 17 a5	
TN 35	LXII 35/10 IVb a12.81	gold foil tinsel	hor. 17 a5	Rahmstorf 2008, 241, cat. no. 1741

TN 36	LXII 35/10 IVb a12.80	gold foil tinsel	hor. 17 a5	Rahmstorf 2008, 241, cat. no. 1738
TN 204	LXII 35/10 IVb	faience vessel fragment	hor. 17 a5	Kostoula & Maran 2012, 200-201, locus 3.8, figs. 5, 9; Rahmstorf 2008, 231, cat. no. 1839, pls. 87,5 & 96,9
TN 205	LXII 35/10 IVb	faience vessel fragment	hor. 17 a5	Kostoula & Maran 2012, 201, locus 3.9, figs. 5, 9; Rahmstorf 2008, 231, cat. no. 1840, pls. 87,4 & 96,8
TN 49	LXII 35/09 IVa a12.89	copper alloy tool	hor. 17 a5	Rahmstorf 2008, 241, cat. no. 357
TN 602	LXII 34/98 IVb a12.84	lead clamp	hor. 17 a5	
TN 606	LXII 34/96 IVb a12.80	lead clamp	hor. 17 a5	
TN 610	LXII 34/87 IVb a12.72	lead spill	hor. 17 a5	
TN 611	LXII 34/95 IVb	lead spill	hor. 17 a5	
TN 612	LXII 35/09 IV a12.97	lead spill	hor. 17 a5	
TN 172	LXIII 35/01 VI a12.85	obsidian flake	hor. 17 a5	
TN 852	LXII 34/99 IVb	obsidian flake	hor. 17 a5	
TN 223	LXII 34/95 IV R78c	marble weight	hor. 17 a5	Rahmstorf 2008, 155, 158, 163, cat. no. 1207, pls. 57,11 & 93,1
TN 609	LXII 35/46 a12.80	lead sheet	hor. 17 a5	
TN 192	LXII 35/48 VI b12.85	partly worked shell (prob. abalone)	hor. 17 a5	
TN 50	LXII 35/15 IV a12.93	copper alloy chisel	hor. 18-20 a2	
TN 604	LXII 35/25 IV a12.92	lead clamp	hor. 18-20 a2	
TN 605	LXII 35/27 IV a12.93	lead spill	hor. 18-20 a2	
TN 608	LXII 35/15 IV a12.93	lead spill	hor. 18-20 a2	
TN 112	LXIII 34/63 VIA b12.82	obsidian flake	hor. 17 a5	Brysbaert & Vetters 2010, 41, tab. 2
TN 108	LXIII 34/64 VIA a12.84	obsidian blade	hor. 17 a5	Brysbaert & Vetters 2010, 41, tab. 2
TN 111	LXIII 34/52 VIA b12.84	obsidian flake	hor. 17 a5	Brysbaert & Vetters 2010, 41, tab. 2
TN 118	LXIII 34/63 VIA a12.84	obsidian flake	hor. 17 a5	Brysbaert & Vetters 2010, 41, tab. 2
TN 110	LXIII 34/42 VIA a12.85	obsidian flake	hor. 17 a5	Brysbaert & Vetters 2010, 41, tab. 2
TN 173	LXIII 34/63 VI b12.85	obsidian flake	hor. 17 a5	Brysbaert & Vetters 2010, 41, tab. 2
TN 107	LXIII 34/54 VIA a12.85	obsidian, exhausted core	hor. 17 a5	Brysbaert & Vetters 2010, 41, tab. 2
TN 114	LXIII 34/52 VIA c12.90	obsidian flake	hor. 17 a5-18	Brysbaert & Vetters 2010, 41, tab. 2
TN 117	LXIII 34/33 VIA	obsidian flake	hor. 17 a5-18	Brysbaert & Vetters 2010, 41, tab. 2
TN 128	LXIII 34/52 VI f12.92	obsidian flake	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 2
TN 98	LXIII 34/62 VI a12.93	obsidian blade	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 2
TN 121	LXIII 34/43 VI a12.93	obsidian blade	hor. 17 a5	Brysbaert & Vetters 2010, 42, tab. 2
TN 102	LXIII 34/42 VI b12.94	obsidian blade	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 2
TN 122	LXIII 34/53 VI e12.94	obsidian blade	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 2
TN 123	LXIII 34/52 VI d12.95	obsidian blade	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 2
TN 129	LXIII 34/52 VI e12.96	obsidian flake	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 2
TN 126	LXIII 34/42 VI a12.97	obsidian blade	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 2
TN 130	LXIII 34/53 VI a12.97	obsidian flake	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 2
TN 131	LXIII 34/52 VI a12.98	obsidian flake	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 2
TN 132	LXIII 34/43 VI b 12.98	obsidian flake	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 2
TN 101	LXIII 34/53 VI f12.99	obsidian flake	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 2
TN 104	LXIII 34/52 VI b13.00	obsidian blade	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 2
TN 105	LXIII 34/43 VI	obsidian, burin	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 2
TN 125	LXIII 34/63 VI	obsidian blade	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 2
TN 133	LXIII 34/63 VI	obsidian flake	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 2
TN 138	LXIII 34/63 VC f13.01	obsidian flake	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 2
TN 137	LXIII 34/42 VC a13.03	obsidian blade	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 2
TN 139	LXIII 34/64 VC a13.03	obsidian blade	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 2
TN 124	LXIII 34/63 VI c12.90	obsidian micro-blade	hor. 18-20 a2	

TN 96	LXIII 34/52 VC g13.04	obsidian blade	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 2
TN 141	LXIII 34/52 VC b13.04	obsidian flake	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 2
TN 135	LXIII 34/63 VC e13.06	obsidian blade	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 2
TN 140	LXIII 34/63 VC d13.08	obsidian flake	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 2
TN 97	LXIII 34/63 VC	obsidian blade	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 2
TN 134	LXIII 34/64 VC	obsidian blade	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 2
TN 167	LXIII 34/63 VC c13.10	obsidian blade	hor. 18-20 a2	
TN 78	LXIII 34/42 VIB a12.85	copper alloy amorphous fragment	hor. 17 a5	Brysbaert & Vetters 2010, 42, tab. 3
TN 72	LXIII 34/63 VI d12.90	copper alloy amorphous fragment	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 3
TN 88	LXIII 34/52 VI c12.95	copper alloy amorphous fragment	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 3
TN 83	LXIII 34/53 VI a12.90	copper alloy awl	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 3
TN 81	LXIII 34/53 VI c12.96	copper alloy wire?	hor. 17 a5-18	Brysbaert & Vetters 2010, 42, tab. 3
TN 69	LXIII 34/43 VIA b12.91	lead clamp	hor. 17 a5-18	Brysbaert & Vetters 2010, 30, 42, tab. 3
TN 59	LXIII 34/53 VI b12.95	lead clamp	hor. 17 a5-18	Brysbaert & Vetters 2010, 30, 42, tab. 3
TN 63	LXIII 34/63 VI b12.93	lead sheet	hor. 17 a5-18	Brysbaert & Vetters 2010, 30, 42 tab. 3
TN 90	LXIII 34/53 VC d13.01	copper alloy amorphous fragment	hor. 18-20 a2	Brysbaert & Vetters 2010, 42, tab. 3
TN 91	LXIII 34/63 VC g13.01	copper alloy amorphous fragment	hor. 18-20 a2	Brysbaert & Vetters2010, 42, tab. 3
TN 64	LXIII 34/52 VC e13.01	lead sheet with cut-marks	hor. 18-20 a2	Brysbaert & Vetters 2010, 30, 42, tab. 3
TN 87	LXIII 34/53 VC c13.02	copper alloy amorphous fragment	hor. 18-20 a2	Brysbaert & Vetters 2010, 43, tab. 3
TN 77	LXIII 34/53 VC b13.03	copper alloy strip?	hor. 18-20 a2	Brysbaert & Vetters 2010, 43, tab. 3
TN 67	LXIII 34/53 VC a13.04	lead sheet	hor. 18-20 a2	Brysbaert & Vetters 2010, 30, 43, tab. 3
TN 68	LXIII 34/52 VC f13.04	lead clamp	hor. 18-20 a2	Brysbaert & Vetters 2010, 30, 43, tab. 3
TN 60	LXIII 34/52 VC d13.04	lead strip or clamp	hor. 18-20 a2	Brysbaert & Vetters 2010, 30, 43, tab. 3
TN 61	LXIII 34/52 VC c13.04	lead sheet with cut-marks	hor. 18-20 a2	Brysbaert & Vetters 2010, 30, 43, tab. 3
TN 92	LXII 35/40 a12.84	copper alloy implement	hor. 17 a5	
TN 113	LXIII 35/02 a12.84	obsidian flake	hor. 17 a5	
TN 120	LXIII 35/02 VI b12.85	obsidian blade	hor. 17 a5	
TN 171	LXIII 35/01 VI	obsidian blade	hor. 17 a5	
TN 183	LXIII 35/03 VIb a12.92	worked fragment of *lapis lacedaimonius*	hor. 18-20 a2	Brysbaert & Vetters 2010, 31, 41, tab. 1
TN 218	LXIII 34/92 VA a13.24	worked fragments of rock crystal	hor. 20 a3-21 a0	Brysbaert & Vetters 2010, 31, 41, tab. 1
TN 863	LXIII 35/13 IIC	worked fragment of rock crystal	unstratified	
TN 184	LXIII 34/61 IVG a13.26 Kilianstörung	black serpentinite with traces of saw	unstratified (above Room 1/02)	Brysbaert & Vetters 2010, 31, 41, tab. 1
TN 858	LXII 35/39 IVD a13.87	*lapis lacedaimonius* chip	hor. 21b1-21c0 (above Room 4/02)	
TN 860	LXII 35/30 IVD a13.87	*lapis lacedaimonius* chip	hor. 21b1-21c0 (above Room 4/02)	

78c contained a marble weight, a clay *conulus*,[124] a lead sheet and a piece of partly worked shell (probably abalone). A copper alloy chisel, a lead clamp and two lead spills and perhaps a hammerstone were excavated in the fill of the room.[125] Room 1/02 housed a small wall bracket fragment,[126] a whetstone,[127] two lime plaster lumps,[128] an exhausted obsidian core, numerous obsidian blades and flakes, several amorphous copper alloy fragments and a copper alloy awl, lead clamps and a sheet, and a crucible fragment,[129] in the fill above the floor: a clay spindle whorl,[130] four amorphous copper alloy fragments, two lead sheets with cut-marks, another small lead sheet as well as two lead clamps, a lime plaster lump[131] and a variety of obsidian blades and flakes. Finally, Room 4/02 contained a steatite *conulus*,[132] a chert blade,[133] two obsidian blades and a flake, a copper alloy implement and a bone pin[134] and in the fill above the floor a *lapis lacedaimonius* fragment with saw marks. Probably connected to this assemblage are rock crystal fragments and other partially worked stone fragments which were found in layers above the LH IIIB Final building.

The identification of Building XI as a palatial workshop has been discussed elsewhere in detail.[135] The amber, glass, gold, ivory and *lapis lacedaimonius* have clear exotic characteristics since all are, as raw materials, foreign to the Argolid (*lapis lacedaimonius*) or the Aegean. In Room 78a the artisans used fine tools where they worked with gold foil on the faience vessels. It is also the intimate spatial association of again wall brackets, the ivory rod and the faience vessels in that room that points to artisans' practices which were decidedly uncommon in Mycenaean palatial contexts. The assemblages of Building XI most clearly demonstrate the difficulties to distinguish exotic materials from local objects. The artisans employed various local (local functional ceramics such as the crucible, and potentially the raw materials for faience production as well), regional (obsidian, andesite, *lapis lacedaimonius*, lead) and materials imported from afar (gold, amber, ivory) as ingredients of their production processes. They may have worked obsidian bladelets in Room 1/02, for instance, as part of their gilding activities, while their small-scale lapidary activities may have not only provided inlays but perhaps also moulds or beads. During slack times, artisans in Building XI might have worked with lead, for instance in the mundane repairing of vessels, in soldering and repoussé activities, and in gilding.[136] What the working processes in these rooms particularly highlight, is the fact that artisans' practices connected to these materials cross purely local or completely exotic activities and cannot be characterized as either one or the other. Finally, the familiarity or unfamiliarity of materials or objects would probably have been conceived quite differently by the artisans in Building XI, and the final consumers of the goods produced.

Discussion

For each of the case studies, those items that are rare in comparable contexts, as outlined above (Exotica in archaeology), were discussed to highlight how such items are still frequently considered as being foreign objects and that exotica are conceived of as being rare, valuable and imported from distant lands. The term exotica is thus still easily taken for granted. Many archaeologists have used it in such a way, as clearly illustrated in several recent papers,[137] whereas both Maran and Panagiotopoulos have recently commented on the fallacy of adopting this static approach to exotica.[138]

We believe, however, that a much more nuanced and contextualized approach is presented here. After the above review, therefore, we would like to move beyond the initial definition based on distance and non-local origin linked to the concept of exotica and evaluate the Tirynthian examples according to the additional definition referred to above which emphasizes the contextualization and dynamic nature of the concept. The conducted interviews (*Tables 1–2*) indicated that even contemporary viewpoints on what constitutes exotica do not necessarily provide the same answers. What do seem generally accepted are their characteristics. So if exotica can be considered differently depending on one's viewpoint it seems that the background of the viewer (professional and social perspectives and their overall context in which they move), has an in-

comprised a circular modified sherd from a vessel base, TN 194, find spot: LXIII 35/01 VC a12.81, hor. 17 a5, and a kylix stem secondarily reworked into a clay stopper, TN 937, find spot LXII 34/79 IVb, hor. 17 a5.

124 TN 147, find spot: LXII 34/95 VIC a12.68, hor. 17 a5.

125 TN 156, find spot: LXII 35/46 Säuberung Kiliangrabung 1982–83 R78c.

126 TN 229, find spot: LXIII 34/53 VI d12.98, hor. 17 a5–18.

127 TN 159, find spot: LXIII 34/53 VIA b12.87, hor. 17 a5.

128 TN 201, find spot: LXIII 34/54 VIA, hor. 17 a5; TN 202, find spot: LXIII 34/42 VIA, hor. 17 a5.

129 TN 191: LXIII 34/63 VI a12.97 + LXIII 34/63 VC, hor. 17 a5–18; Brysbaert & Vetters 2010, 30, 41 tab. 1.

130 TN 95, find spot: LXIII 34/52 VC a13.02, hor. 18–20 a2.

131 TN 203, find spot: LXIII 34/64 VC, hor. 18–20 a2.

132 TN 166. Find spot: LXIII 35/12 VI b12.87, hor. 17 a5.

133 TN 161. Find spot: LXIII 35/12 VI a 12.88, hor. 17 a5; perhaps an Early Helladic residual find.

134 TN 193: LXII 35/48 VI a12.88, probably hor. 17 a5, but found in the area disturbed by pit no. 123/02.

135 Kilian 1984, 56, 69 fig. 1; Maran 2004a, 13–14, 16, 17 fig. 5; Maran 2008, 50–53, 90; Rahmstorf 2008, 240–241 pl. 104; Brysbaert & Vetters 2010, 29–31, 33–34; Kostoula & Maran 2012, 213–217.

136 Mossman 2000, 91; see also Brysbaert & Vetters 2010, 34.

137 Vianello 2011b; van Wijngaarden 2012; Foster 2008, 327–330.

138 Maran 2012; Panagiotopoulos 2012.

fluence on the value(s) imbued on materials and objects. Can we then still differentiate between what exotica are and what they are not, which criteria can we use for this differentiation and is there a point in doing so?

In investigating our case study materials via a *chaîne opératoire* approach, some very useful results came to the forefront as the discussions per case study may have already indicated. First, the activities that artisans conducted in both phases of the LH IIIB Middle Building (case studies 1A and 1B) suggest that several artisans collaborated closely together while they were processing materials towards finished produce. As part of their day-to-day practices, they shared materials and possibly knowledge about these materials and about how to process them best. That the artisans in these workshops, furthermore, combined day-to-day practices with clearly non-Mycenaean ways of conducting business became evident by the presence of several items that were called exotica in the past and more recent literature.[139] The *chaîne opératoire* approach, combined with contextual analyses of the finds from this workshop, illuminates the complexities of some of the characteristics that determine an item or a practice to be exotic. So far, this combined approach has provided evidence for the continuous import of exotic raw materials, half-finished/manufactured as well as finished products. However, these were either actively modified in craft activities, as in the case of the ostrich egg shell (case study 3A) or the metal finds (case study 1A, e.g. the javelin mould). They also became hybridized in local practices, as was the case for the gilded faience vessels (case study 3B). In choosing this vessel shape, the artisans consciously emulated in part Near Eastern prototypes, but equally consciously modified the vessel shape into a typical Mycenaean ritual vessel for libations, i.e. a rhyton. Artisans/builders may have also reused certain materials for mundane local needs at the end of their life span, as in the case of the fragmentary stone vase employed as building material (case study 3A).

These examples indicate that an interpretative approach to exotica, purely based on notions of the material's distant geographic origin, does not do justice to people's apparently changing appreciation and value assignments to such materials.[140] Also, the interpretation of non-local materials or objects as being exotic or being thoroughly assimilated into the local material culture can only be credible through contextual analysis. Artisans' different value assignments possibly combined with practical needs are evident, for instance, in the different amounts of Melian obsidian and the scarce *lapis lacedaimonius* (case study 3B), indicating different valuations connected to such materials despite their relatively similar provenience distance.

The interview results (*Tables 1–2*) made it obvious that what is deemed exotic depends, seemingly, on a combination of both the geographical *and* the cultural viewpoint of the observer or of those that interact with the items themselves. Moreover, the perceived cultural distance is indicative, in that additional value is given to items that are not part of that society's familiar surroundings, even if these items are in fact present within that familiar context at that specific point in time. A clear example is the repeated presence of African musical instruments or Indonesian furniture that interview participants have in their own homes. As such, people seem to value the distance over which these items may have travelled, as well as their own unfamiliarity with the items, several aesthetic and technical qualities which the items contain, and the fact that the owner distinguishes him/herself from people around him/her by owning such items. This indicates values incorporated into the make-up of the items (materials from afar, made by people who are from afar), possibly accumulated values obtained in their circulation patterns (travelled from afar), and being consumed in a context where they seemingly are distinct from everything else and, as such, receive frequent attention and desire. The viewpoint from which one starts is also crucial in the study of archaeological remains and the social practices that they may represent. This may be exemplified by, for instance, certain motivations behind Hatshepsut's expeditions to Punt and by the controlling elites of the Aegean, over the circulation of and access to specific hard-to-get materials such as gold, amber, carnelian, lapis lazuli, copper and tin, and possibly also bronze. Our western viewpoint is likely to differ from those of the past about specific objects or features, as Burns pointed out over a decade ago;[141] all too often we still project our viewpoints onto others, present or past.[142] Most people, though, would agree that exotica exude high value assignments as the result of a combination of highly skilled production, (possibly even by artisans from elsewhere), with exclusive and rare raw materials, circulation patterns that incorporate accumulative life histories of such items, and consumption practices in specific closed circles of people that have very targeted socio-politically imbued agendas. These circles of people may, furthermore, be in control over the access to these exclusive and rare raw materials and

[139] For instance: Vianello 2011b; van Wijngaarden 2012; Foster 2008, 327–330.

[140] See also Brysbaert 2008, 175–178.

[141] Burns 1999.

[142] Heymans & van Wijngaarden (2011, 124) mention, for instance, that "low value manufactured exotics" are "… often not made of valuable raw materials". However, they do mention ivory and semi-precious stones as a raw material for some of these. Moreover, the workmanship associated with these items, is according to the authors (same page), not highly specialized. These are clearly etic standards which determine, though, what materials are valuable and which skills highly specialized.

the artisans with the knowledge to transform them.[143] The elephant is a classic example. Elephant tusks appear to have been considered exotic in the past, since ivory possession and working have often been associated with elite consumption patterns and palatial power symbols in the Aegean Bronze Age and beyond.[144] Tusks, moreover, were often depicted on Egyptian murals as gifts, stocks being stored by the ruler or being brought in by people from afar. Tusks as raw material were found in Aegean palatial contexts and workshops where these were processed may have been identified.[145] Having thus been hunted for millennia for its tusks, the animal itself is now protected but the action of the hunt is still considered exotic, rare and valuable due to exclusive access.[146] As such, hunting elephants in specific restricted social circles and the continuous quest for ivory tusks confirm the high value of ivory, or least the physical effort and cost to obtain it.

As mentioned earlier, the *OED* definitions mention one specific aspect associated with exotic: something specially produced, and to this we will now turn in more detail. In *Table 8*, the five-tier classification as presented and critiqued above (Approaching the production of exotica) is tested against the various finds from our case studies mentioned and discussed in detail (Workshops and activity areas in Late Bronze Age Tiryns). This grouping, although initially helpful, raises several issues concerning distance, whether geographic or cultural and whether we need to consider specific geographical distances (measured in km) before something becomes an import.[147] It became evident that geographical distances may only be one factor of the perceived distance of an item or material, especially in relation to materials such as obsidian, *lapis lacedaimonius* and lead as in case study 3B, or the African musical instruments and Indonesian furniture, as in the interview series. Different stones were worked in palatial contexts such as Tiryns (case study 3B), but what it took for these materials to get there is not clear.[148] Carter called obsidian in the Bronze Age Minoan context exotic because of the distance that the material had to bridge in order to form a supply of semi-raw obsidian material to Crete, implying that distant, possibly dangerous journeys may have brought along added value to such materials.[149] Also Tykot's recent article about obsidian on the fringe of the central Mediterranean sphere mentions the material's exotic nature.[150] However, due to the ubiquity of obsidian tools in Late Bronze Age Mycenaean contexts the validity of characterizing them as exotic and as functioning as tools of distinction is somehow questionable. Inquiring whether materials from locations such as Melos (about 100 km away from Tiryns), Aigina, Poros and Methana (between 50 and 80 km from Tiryns) should be considered local or imported, is, therefore, less crucial, especially since Helms also pointed out that geographical distance is not always considered neutral by each cultural group.[151]

Yet more complex are the ostrich egg fragment (case study 3A), the glass beads (case study 1A and 1B), and the copper alloy items (several case studies, especially 1A). The raw materials for each of these went through at least one production stage possibly at or near the source of the raw material, before they were brought to the Aegean. Employing the *chaîne opératoire* approach forces one to consider these important technical and social details. For example: the ostrich eggs from Egypt, Libya or the Near East were first drained of their content and possibly polished *before* being shipped to the Aegean. They were subsequently shaped and embellished locally into rhyta with metal, glass, and semi-precious stones.[152] Such an ostrich egg can certainly be considered an exotic item even though by re-modifying it, it becomes locally appropriated. Despite its modification into a rhyton, the object has high value due to its technical and material make-up, where it was made (and possibly by whom), and its restricted use context. This ostrich egg could, thus, fit several of the five production mode types (see *Table 8*), both technically and socially, but these production modes illustrate that they are, by far, not flexible enough when employed in a contextualised study. What we would need is the possibility to interconnect and combine the production

[143] See Brysbaert 2008, 174 for such interpretation relating to painted plaster manufacture and use.

[144] Krzyszkowska & Morkot 2000, with references; Lapatin 2001 with references.

[145] For Zakros palace, for example: Platon, E.M. 1988, 69, 126 pl. 19; Platon, N. 1974, 100. See Tournavitou 1995 for workshops.

[146] http://www.guardian.co.uk/world/2012/apr/15/spain-king-juan-carlos-hunting, accessed 06/05/2012. For historical periods, see e.g. Shalem 2004 with references.

[147] See recently Cline 2005, 45–47, but not without problems since he, for instance, uses the boundaries and borders between countries as the limit from when onwards something becomes import or export, such borders are a modern, thus etic, invention. Some items also do not have a straight production line and may make several detours, as part of transport or the production chain, before they arrive at their final destination, also not taken into account by Cline 2005, 47. The ostrich egg example from Tiryns is illustrating this very aptly.

[148] See Bevan 2007, 163–165 on Mycenaean-style stone vessel types versus Knossian production; Tournavitou 1995, 213–236 on stone working in the Mycenaean House of the Shields and adjacent areas; Maran 2008 and Brysbaert & Vetters 2010 with references on small lapidary workshop at Tiryns; Varti-Matarangas *et al*. 2002; and Brysbaert 2014b, in press, for architectural uses of stones at Tiryns.

[149] Carter 2004, 99, 101 on the possible indirect obtaining of exotic materials such as obsidian at Mochlos.

[150] Tykot 2011.

[151] Helms 1993, 3.

[152] Brysbaert 2013, 250–252.

mode types according to contextual needs and reformulate new ones when and if the context dictates this.

By considering the copper alloy objects, other complex patterns of material processing by skilled artisans, sometimes through sharing, emerge. Published evidence points to copper ore extraction, smelting and probably casting of ingots on Cyprus.[153] However, so far, only one oxhide ingot stone mould has been found, in the palace of Ras ibn Hani, close to Ugarit, in Syria, even though ingot production must have taken place on Cyprus as well, possibly using sand moulds.[154] The ingots were then transported all over the East Mediterranean, for which we have the telling evidence from, for instance, the Ulu Burun and the Cape Gelidonya shipwrecks, both carrying ingots of almost pure copper and tin.[155] As previously discussed, even a pure copper oxhide ingot is not a raw material but is the result of several previous steps in a complex process of converting metallic ores into finished objects,[156] and as such, different activities in this complex set of processes may divide the *chaîne opératoire* of each activity into different locations.[157] To compound this further, scrap bronze was also found on the Gelidonya shipwreck next to a number of pure copper ingots and a few bronze ingots, cast in oval shapes.[158] These bronze ingots and bronze scraps were ready to be reused.[159] In Tiryns, a bronze ingot the details of which have been published by Kilian[160] was found in the south wall of Room 215 in the LH IIIB Middle complex (case study 3A). While the notion of bronze oxhide ingots has been disputed rather convincingly by Muhly and others,[161] the rectangular Tiryns ingot definitely constitutes a bronze ingot. As such, tracing the *chaîne opératoire* of it is much more complex than that for a pure copper ingot since artisans present in different locations may have produced several items contributing to the bronze ingot's make-up. Artisans may have recycled and thus mixed several discarded items and the entire process of interacting with these materials may have preceded the production of such an ingot, which then arrived in Tiryns, as a finished product, yet to be reused as a raw material.[162]

By re-melting copper or bronze scrap, it also seems that people at Tiryns conducted similar practices as artisans did elsewhere, as found, for instance, in our first case study, where such scrap may have been remoulded into a weapon's part or where it could have been used to colour Egyptian blue (case study 1A).[163] Bronze as the metal phase of the Egyptian blue pigment composition had been attested at Knossos, Akrotiri and Mycenae.[164] Traces of bronze have also been detected in Egyptian blue on the wall paintings from Phylakopi, Orchomenos, and at Tell el-Dab'a.[165] While some of the original raw materials may have had a decidedly exotic origin, the artisans who locally used, reused and adapted these materials, embedded these in their local practices, as recognized from finds at several Mycenaean palatially controlled workshops. As such, the processes involved in reusing bronze scrap in pigment production fit, not just one, but a number of the five production modes. The copper providing the blue hue for the Egyptian blue pigment may be recycled[166] and the tin (when present too), indicates the employment of recycled copper alloy or bronze scrap to colour the pigment. Tin may have been sourced from Afghanistan, West Iran, or the Taurus in Turkey.[167] The exotic components fused into a hybrid composition forming the Egyptian blue pigment may not betray, at least visibly, its original constituents (unlike the example of the ostrich egg rhyta). However, the end-product seemed to have had a specific value to the palace since the Egyptian blue was likely produced in its (confined) workshops. Blue coloured glass was mentioned in the Linear B tablets[168] which may be a reference to this blue glass-based pigment too.

Finally, raw glass production is still not accounted for in the Aegean during the Bronze Age but made it into the Aegean as ingots coming possibly from Egypt or from the Syro-Levantine coast. Several coloured glass ingots are known from the Ulu Burun wreck, some coloured with cobalt which is, most often, native to Egypt.[169] Faience was made locally in the Aegean, maybe also on the Greek Mainland as hinted at

[153] See most recently Muhly 2009; several papers in Betancourt & Ferrence 2011.
[154] Van Lokeren 2000, 275 implies as much with his experiment.
[155] Hauptmann *et al*. 2002; most recently Pulak 2010 with references; Kassianidou 2012, personal communication.
[156] Hauptmann *et al.* 2002, 5; Tylekote 1982; Zwicker 1985; Kassianidou 2009; Gale 2011, 214.
[157] For metal production: Pigott 2011, 276; for ostrich egg rhyton production: Brysbaert 2013.
[158] The bronze ingots are, as such, not mentioned by Bass 2010, 800–802, but they are in Bass 1975, 8, 50, 52.
[159] See also Brysbaert 2011b; on the topic of bronze ingots, see Kassianidou 2012, personal communication; Bass 1975; 2010 on the full assemblage of Cape Gelidonya.
[160] Kilian 1988, 130 n. 53, 140 fig. 37,4; some percentages of the elements, detected partly by atomic absorption spectroscopy and partly neutron activation analysis, however, are erroneously cited: copper constituted 82%, tin 13.2% (communication E. Pernicka 2012 on sample/lab. no. FG-880115).
[161] Muhly 2009, 18–20.
[162] Even if the copper derives from ores in Laurion and thus was not a long-distance import, the alloyed tin was in all probability not native to the Eastern Mediterranean region.
[163] E.g. Shortland 2000 for the same phenomenon at Amarna, see also Brysbaert 2007.
[164] Philippakis *et al*. 1976.
[165] Brysbaert 2007b; 2008.
[166] Philippakis *et al*. 1976; Brysbaert 2008, 135–136.
[167] Muhly 1993; Yener *et al*. 1993; most recently on the multiple sources of tin: Pigott 2011, esp. 275, 277, 281.
[168] See e.g. Bennet 2008, 159–160; Nightingale 2008, 79–80.
[169] But see now Panagiotaki 2008, 50–51.

by Panagiotaki but the colouring materials, if copper-based, came again from elsewhere.[170] As such we recognize in the faience vessels from Building XI (case study 3B), yet again, a hybridized mixture of materials and skills, resulting in locally appropriated items.

What emerged from the contextual analysis of the case studies is the fact that objects and raw materials often change their status as exotic during their life history as a result of recycling or reuse, thus secondary uses that obliterate characteristics that once set them apart from the local material culture. In that sense, one could argue that materials which were often recycled, such as metals, may drop in value due to the fact that they can be reused so often. On the other hand, the fact that these recyclable metals were so often reused and so strongly sought after, even after the palatial collapse,[171] may also indicate the opposite. Their value may have become higher and higher, not only because they were so often recycled, but because their supply line was less fluid, thus more wanted. Their limited circulation, thus, raised the value, at that point in time.

Conclusion

The work conducted in the Tiryns workshops and the concentrations of foreign items present in these contexts suggests people who possibly came from elsewhere, who were familiar with foreign practices or may have learnt them elsewhere. Therefore, arguments for resident Cypriots solely on the basis that Cypro-Minoan signs are attested at Tiryns,[172] or that Ugaritians were present because Ugaritic cuneiform signs were carved in the ivory rod,[173] have already been shunned.[174] In order to better understand the social context of these objects, they need to be correlated with other material remains. So far we focused mainly on production and materials, but also consumption patterns need scrutiny and these may not fit in any specific classification system as outlined in *Table 8*. The material evidence from Tiryns suggests several non-local or hybrid practices, illustrated through so-called exotica, practices which may have overlapped with local ones in many configurations. These may reveal a complex series of technological and social networks, both local and beyond, where objects and practices became indistinguishable.[175]

Wall brackets, for instance, predominantly from the East and Cyprus, and also found on the Ulu Burun shipwreck,[176] were, at Tiryns and Cyprus, often found in places where metallurgical production was conducted.[177] The LH IIIB Middle building at Tiryns (case study 3B) contained a wall bracket potentially imported from Cyprus along with locally made ones, all associated with a metallurgical workshop area. All were probably used in a similar way, thus indicating shared practices by the users of both, the Cypriot wall bracket and the local ones, and probably reflecting a practice better known from Cyprus and the Near East, as argued convincingly by Rahmstorf.[178] We cannot be sure of the ethnicity of the wall bracket users in Tiryns but socially, these people may have been linked through similar craft activities, as artisans colleagues so to speak, thus forming a specific Tirynthian network, based on shared technologies, possessions, knowledge,

Table 8. Production mode categories against objects from Tiryns' palatial case study contexts, the place names in bold: to be considered local, or not?

Mode of production	*Item*	*Case study*
Elsewhere, imported	Likely Cypriot wall bracket Bronze violin bow fibula	1B 2, 1B
Locally, with imported materials, foreign or local style	Ivory inlay Gold foil overlay on faience	1B 3B
Locally, with local materials, imitating foreign objects	Tiryns-made wall bracket Faience *rhyton* heads	1B, 3B 3B
Locally, with imported/local materials, by local/foreign artisans, knowing foreign skills	Ivory rod with cuneiform signs[1]	3B
Locally, with local materials, by local artisans, with skills possibly learned elsewhere	Obsidian tools (**Melos**) *lapis lacedaimonius* stone Andesite grinding stones (**Aigina**, **Poros**, **Methana**)	All 3B 3B

[1] This object could also just have been locally used but produced elsewhere altogether.

[170] See Foster 1979; Evely 2000, 445–469: already introduced since the Early Bronze Age after which polychromatic objects were produced as well. See also Panagiotaki 2008, 50–51.
[171] E.g. Knapp 2000 and see scrap metal on the Cape Gelidonya shipwreck mentioned above.
[172] Vetters 2011b.
[173] Cohen *et al*. 2010.
[174] See e.g. Brysbaert & Vetters 2010; Vetters 2011b; more decisive are Cohen *et al*. 2010, 16–17.
[175] Cohen *et al*. 2010; Kostoula & Maran 2012; Vetters 2011b.
[176] For an overview of sites with wall brackets see Rahmstorf 2008, 95–107.
[177] Rahmstorf 2008, 110.
[178] Rahmstorf 2008, 110.

belief systems and practices which may link into similar technological and socio-economic networks beyond Tiryns into the East Mediterranean sphere.

That Tiryns was seemingly part of a socio-economic East Mediterranean network is further reinforced by the presence, of several other items there, namely an ivory rod from the workshop in Building XI where specialized crafts were possibly carried out by foreign workers[179] (case study 3B), the presence of Mycenaean sphendonoid weights conforming to an Egyptian-Levantine standard,[180] plenty of incised Cypro-Minoan signs on imported and local vessels,[181] a clay ball with a Cypro-Minoan inscription in a post-palatial layer above Building XI,[182] and a fragmentary Cypro-Levantine lamp in the Lower Town Northeast.[183]

As previously discussed,[184] such objects cannot be seen as mere exotica but should be understood within their specific context, taking into account both their material make-up (technical production processes and materials), and their materiality (who made them, where, how they socially functioned and in which context, used by whom and for what purpose).

Bringing all the material evidence of the palatial period together and based on spatial and contextual associations of several foreign artefacts that do not appear to be deposited *intentionally*, it seems that Tirynthian contacts with Cyprus and the Levant went beyond mere trade connections. Various scholars working in Tiryns have now convincingly suggested the presence of either a small group of Cypriot or Levantine people in Tiryns, possibly artisans, or local people who had been exposed long enough to Cypriot and Levantine lifestyles to have taken over several of their practices, some of which may even have ritual or magical connotations,[185] especially when considering the link between metallurgical activities and the presence of the ivory rod as a potential ritual paraphernalia. These people, local or foreign,[186] would not have considered any of their possessions exotic but may have employed them as diacritical devices, in order to include and exclude others who were not part of their craft, or employed them on a ritual- and knowledge-based level, to either create asymmetries in existing hierarchies, or just as the material expression of shared understandings and practices, known and learnt elsewhere.

We, as authors, agree that exotica consist of rare and exclusive raw materials which may have magical properties in themselves, often manufactured by highly skilled artisans (possibly even foreigners), through hybrid usage of materials, styles and technologies into goods, features and items. We also agree that these items were meant to be pleasing and aesthetically attractive since they needed to fulfil specific socio-economic roles in circles of elites but possibly too in artisans' contexts, the former which may have controlled the access to and circulation of any part of the totality of such items. It thus seems that most of these characteristics are similar for people in the past and present alike.[187]

This should indicate that our point in the present paper is not to discourage the employment of the term exotica—it actually suits us in many different contexts—as long as we consider the implications and the complexity it entails. As such, we should be aware of the dangers involved in calling something exotic uncritically and de-contextualized. Moreover, it should also be divested of its link to a western attitude of attributing the distance value it may imply to a superior context, thus robbing the appropriators off their own viewpoint and understanding. If misunderstood or taken in its traditional western meaning, calling something exotic is seriously misleading, because it is a very static term for changing stages in material production, circulation and consumption and it does not take into account the socio-political, economic and religious contexts and contact zones of *all* the people involved, objects and practices in which these items were employed and with which they interacted. A telling example can be understood in Sacconi's work interpreting, to our feeling correctly, certain quantities of bronze present in palaces, like Knossos, purely as the payment for linen garments (tablet KN L 693). Even the ideogram (*167) on tablets KN Oa 730, Oa 733 and Oa 734 refers to the weight of the bronze as its value, not its potential far-away origin or its shape.[188]

In order then to avoid this static connotation often linked to exotica, we attempted to illustrate that their production, circulation and consumption are ultimately parts of a series of social and professional processes, not static stages (inasmuch as Leroi-Gourhan also saw the *chaîne opératoire* as processes[189]). During these processes people shared materials, equipment, skills, knowledge, belief systems and practices that overlap and indicate people's active presence in several local, regional, and interregional dynamic networks, moving in several directions and axes. Those processes then emphasize contact zones where

[179] Maran 2008, 90; Cohen *et al*. 2010; Kostoula & Maran 2012.
[180] Rahmstorf 2008, 159–163.
[181] Hirschfeld 1996.
[182] Vetters 2011b.
[183] Maran 2004a, 25 fig. 15; Maran & Papadimitriou 2006, 120 fig. 30.
[184] Cohen *et al*. 2010; Maran 2012.
[185] On ritualized skilled practice, see Voutsaki 1995, 9; on the magical connotation of the act of crafting, see Brysbaert 2008, 167–168, 183–184.
[186] In allegiance with Bhabha's interest in the ambivalence of identity in contact zones, Bhabha 1994, 37.
[187] Foster's 2008 examples are indicative.
[188] Sacconi 2005, 73–74.
[189] Brysbaert 2011a.

hybrid materials, objects and identities can be acquired, transformed and translated into something/someone new, rather than places of origin and ethnic identities.[190]

Exotica, therefore, can probably best be understood, on the one hand, as those materials, objects, phenomena and places that include and exclude as part of processes, especially when seen from a western perspective,[191] whilst, on the other, not all parties surrounding such items may perceive these as exotic. One could, therefore, still maintain that when one possesses, has access to, or understands such items or practices, one becomes part of the social group that has similar possessions, understanding or access to them, but this could be disconnected from power hierarchies. One may *also* be excluded if one has no such access or understanding of the item or phenomena, but this should only be understood and interpreted as such when the specific material context study warrants it.

The value of exotica may thus not sit with only foreign materials and objects, but be best considered in relation to hybrid practices, which consist of both people's interactions *and* the various materials, intertwined and entangled with one another[192] as our case studies and their analyses have illustrated. It is the practices of a society or an individual, and the associations with such and other more mundane objects that form their multiple and dynamic identities, both of objects and people. As in the past when these practices changed, people's identities changed as well and, as such, not all sharing of such practices needs to be defined in the context of dominators and dependents. It is thus the in-depth examination of material finds and their technologies on the ground (i.e. in their specific contexts) that allows us, as archaeologists, to focus on all, indigenous and other, groups that make up the entire context we study. Therefore, the wall-brackets may have meant nothing special to the foreign artisans at work in Building XI while local apprentices, if present in the same workshop, may have seen advantages in appropriating its use in order to facilitate a mutually agreeable working environment.

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[190] After Counts 2008, 112.
[191] van Dommelen & Rowlands 2012, 27.
[192] van Dommelen 2006, 119, referring to N. Thomas's crucial work on this theme.

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