# GARDENING AT DEIR EL-BERSHA IN THE MIDDLE KINGDOM: A UNIQUE REPRESENTATION OF *CUCURBITACEAE* CULTIVATION

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Abstract: *Decoration in the tombs of Middle Kingdom officials often resembles a jigsaw puzzle because many of them have suffered damage, both from natural disasters and human intervention, and their scenes are often preserved only in fragments. This applies to the tomb of Djehutyhotep II at Deir el-Bersha, dating to the second half of the 12th Dynasty, and especially to the right-hand wall of the inner chamber, which was once decorated with scenes related to agriculture, food production, wine-making, gardening and crafts. The present paper examines a set of tiny fragments from this wall that are now kept in the British Museum, which show the cultivation of a plant from the* Cucurbitaceae *family with the aid of a trellis. The plant depicted there can probably be identified with the vegetable melon* (Cucumis melo), *a popular vegetable crop. The illustration is unparalleled in Egyptian art, and may be considered an innovation of the Middle Kingdom.*

Keywords: *Deir el-Bersha, Djehutyhotep II,* Cucumis melo*, BM EA71520, BM EA71525, BM EA71528*

The rock-cut tomb of Djehutyhotep II at Deir el-Bersha dates to the second half of the 12th Dynasty, and is among the most outstanding Middle Kingdom monuments to have been commissioned by nobles in provincial cemeteries.[1] The tomb has suffered considerable damage over the centuries, both from natural disasters and from human intervention. Much of its original decoration is now lost, or is preserved only in fragments that have become detached from the walls and are deprived of their original context. Great numbers of these fragments are still on-site and await further investigation, because they were not included in the primary monograph published by Percy E. Newberry in 1895.[2] Newberry and his team surveyed the tombs of Deir el-Bersha in 1891/92 and published them in two monographs issued by The Egypt Exploration Fund (now Egypt Exploration Society).[3] Some of the pieces were apparently taken to Great Britain because more than forty fragments were donated to the British Museum by the Fund in 1894, only two years after the survey.[4] More than sixty fragments were also collected in the course of the joint Harvard University – Museum of Fine Arts Boston expedition led by George A. Reisner and Hanford Lyman Story in 1915.[5] They were taken to the Harvard Camp and published in a short article by William S. Smith, though not until 1951.[6] Large pieces collected during this later expedition, as well as pieces recovered in the course of Newberry's investigations, were delivered to the Egyptian Museum in Cairo, though the museum also keeps wall fragments that where collected before the survey of 1891/92.[7] One fragment from the eastern wall and one from the ceiling were also transferred from the Harvard Camp to the Museum of Fine Arts in Boston in 1947.[8]

Most of the fragments in question originated from the right-hand (eastern) wall of the inner room, which was most badly affected.[9] The wall was once dominated by a large-scale image of the tomb owner and a procession of his female relatives, who faced various scenes related to agriculture, including food production, wine-making, gardening, and crafts. In addition, the lower register of this wall displayed a procession of male relatives and attendants. Newberry and Smith both attempted to reconstruct the original layout of the scenes (Figs. 1–2),[10] but none of the suggested reconstructions are entirely satisfactory, in part

1 http://www.meketre.org/repository/tomb/65547 (accessed 10 February 2016).

2 Newberry 1895.

3 Newberry 1895; Griffith and Newberry 1895.

4 See the Online catalogue of the British Museum: http://www.britishmuseum.org/research/collection_online/search.aspx (accessed 10 February 2016).

5 Freed *et al*. 2009, 94–100.

6 Smith 1951.

7 Smith 1951, 322, 332 FN 3.

8 Boston, Museum of Fine Arts, inv. nos 47.1659, 47.1660.

9 Newberry 1895, 32ff.

10 Newberry 1895, Pl. XXIV; Smith 1951, Figs. 1–2.

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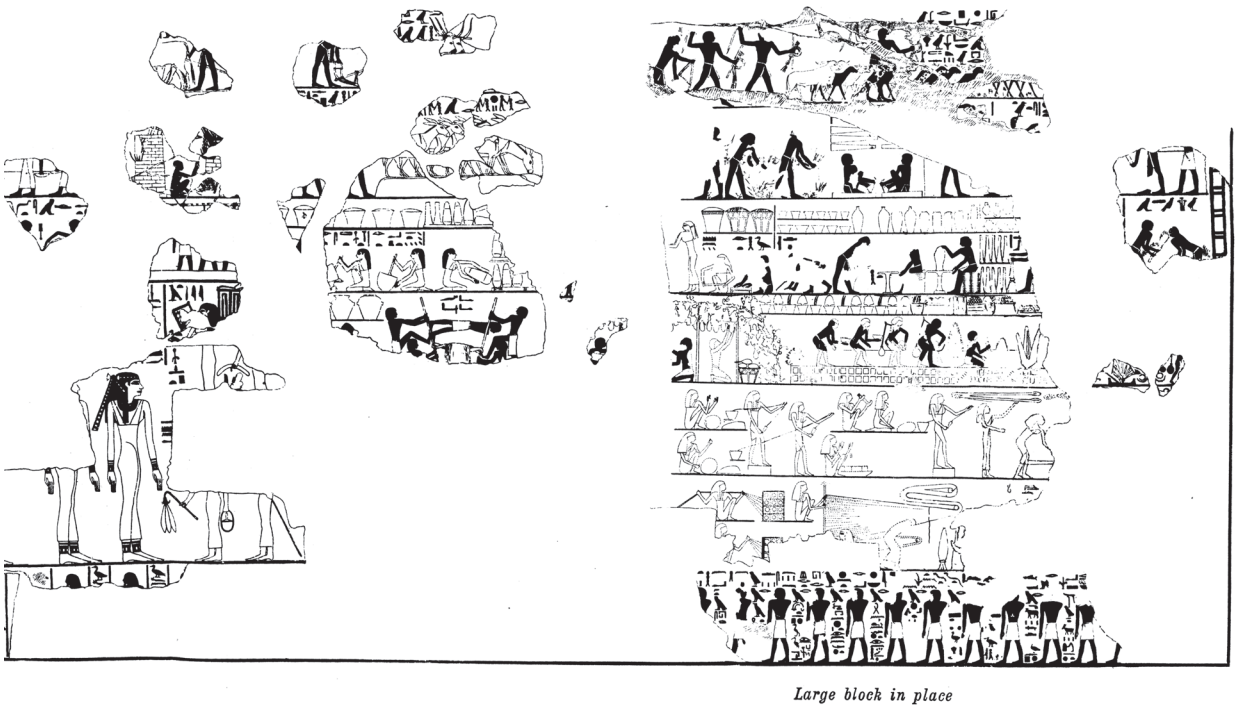


Fig. 1 Reconstruction of the right-hand (eastern) wall of the inner room of the tomb of Djehutyhotep II at Deir el-Bersha, southern half. After Newberry 1895, Pl. XXIV.

because some large and heavy fragments from the wall still lie on the floor of the tomb, and have not yet been turned. The Belgian mission currently working at Deir el-Bersha under the direction of Harco Willems will greatly contribute to the current state of research, and new insights into the tomb decoration are to be expected.[11]

The present paper focuses on a set of tiny fragments belonging to the corpus of gardening scenes, whose significance has not been fully appreciated. The right (southern) half of the wall contained at least three different gardening scenes (Figs. 1–2). The first of these was included in the fourth register (from the bottom), and includes a large vegetable patch with men sowing, watering and harvesting vegetables.[12] Above their heads is a sub-register with images of trees and other plants in flower pots, as well as fruit and vegetable in baskets or bags, and on mats or flat baskets. The second gardening scene is situated at the right end of the next (fifth) register up, where two men are shown gathering green plants that have not yet been identified.[13]

The third scene has rarely been noticed, although it is of great iconographic and archaeobotanical interest. Newberry reproduced a small wall fragment with traces of a stand upon a register (or sub-register) line, below which he was able to recognise the "scrap of a flower."[14] According to him, it might have been associated with other "very small chips of painting" showing "leaves and fruits of cucumber" that could not be reproduced, but which were said to be in the British Museum. For unknown reasons, however, Newberry placed the fragment in his reconstruction of the right-hand wall, between the scenes representing bread-making (fifth register) and of a wine press and workers gathering grapes from trellised vines (fourth register; Fig. 1). Accordingly, Newberry's "scrap of a flower" was situated close to a trellised

[11] The most recent publication (de Meyer and Cortebeeck 2015) has unfortunately not yet been available to the author when preparing this paper.

[12] Newberry 1895, 35, Pls. XXIV, XXVI; Smith 1951, 324, Fig. 2. See also http://www.meketre.org/repository/theme/1146883 (accessed 10 February 2016).

[13] Newberry 1895, 34, Pls. XXIV, XXVII.4; Smith 1951, 324, Figs. 2, 4.

[14] Newberry 1895, 35, Pls. XXIV, XXVII.7.

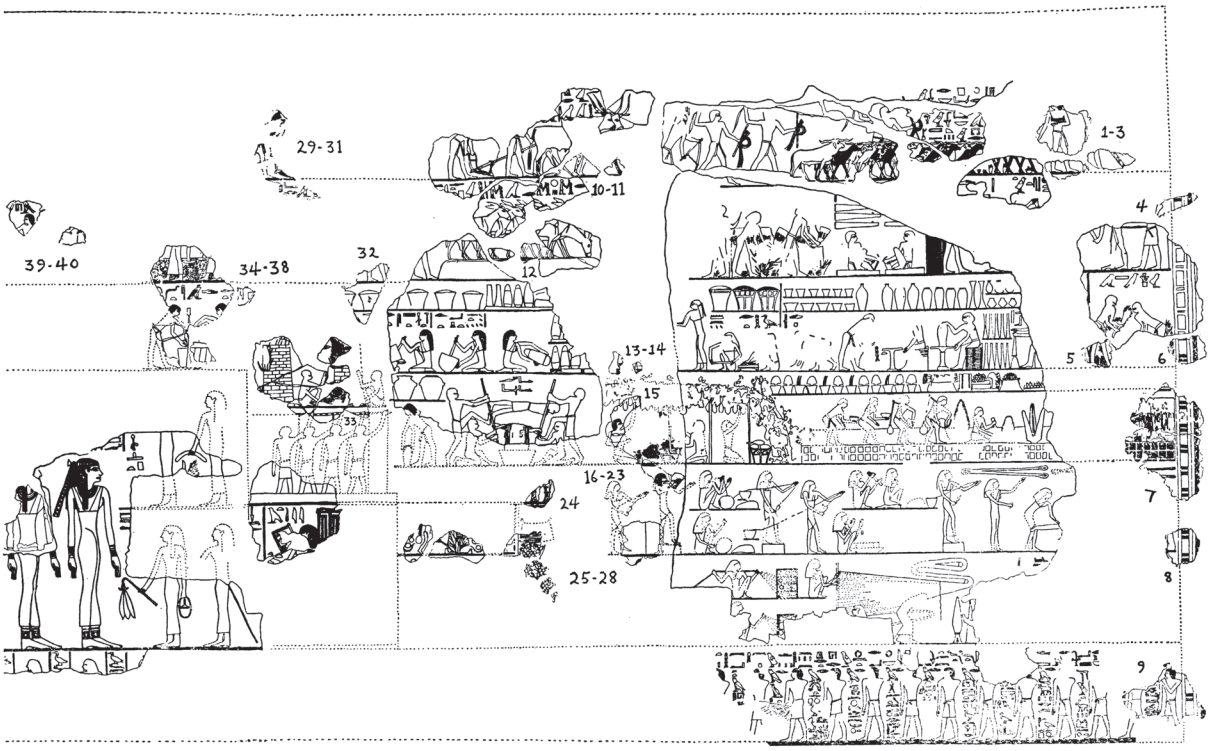


Fig. 2 Reconstruction of the right-hand (eastern) wall of the inner room of the tomb of Djehutyhotep II at Deir el-Bersha, southern half. After Smith 1951, Fig. 2.

grape-vine, as if it was part of it, despite being more reminiscent of a "cucumber."

This fragment appears to have remained in the tomb for twenty years, until it was taken to the Harvard Camp. It was again published by Smith, almost forty years later, along with five other fragments (nos. 24–28) that almost certainly belonged to the same scene (Figs. 2–3).[15] Smith identified another piece bearing the image of a near-identical stand, which also featured traces of a plant under the register line. He also documented three further fragments containing the same plant, which was revealed to be some sort of vine on a trellis. Another, larger fragment contains the same vine, the lower part of a green bag or basket above it, and the corner piece of a different scene.

This different scene proved to be of an orchard. Newberry had earlier published two fragments of an orchard scene, showing a fig tree surrounded by a retaining wall and watered by a male worker (Fig. 1, to the right of the vegetable patch).[16] The large fragment documented by Smith shows the right end of this orchard scene, including the foot and water jar of a worker who was occupied with watering the trees (Fig. 3). Smith was therefore able to demonstrate that these vine-on-a-trellis- and orchard scenes were located next to one other on the wall, and was able to suggest that they were originally situated in the second and third register from the bottom, to the left of a scene showing linen production (spinning and weaving).

To summarise (Fig. 2), the gardening- and orchard scenes in the right (southern) part of the wall were, from bottom to top, of a vine on a trellis (second and third register), an orchard (third register), a vegetable patch including plants in pots, and produce in bags or baskets (fourth register), and of gathering green plants (fifth register).

Smith only published a grayscale reproduction of the wall fragments (based on his coloured copies), but the colours and details have been described quite extensively (Fig. 3): "The reddish supports on which the vine was trained show through the foliage here and there. Both the foliage

[15] Smith 1951, 324, 328, Fig. 2, Pl. 19. The larger fragment shown on the right part of plate 19 (Fig. 3) is said to be part of the grape arbour, and does not belong to this scene.

[16] Newberry 1895, 35, Pls. XXIV, XXVII.9–10.

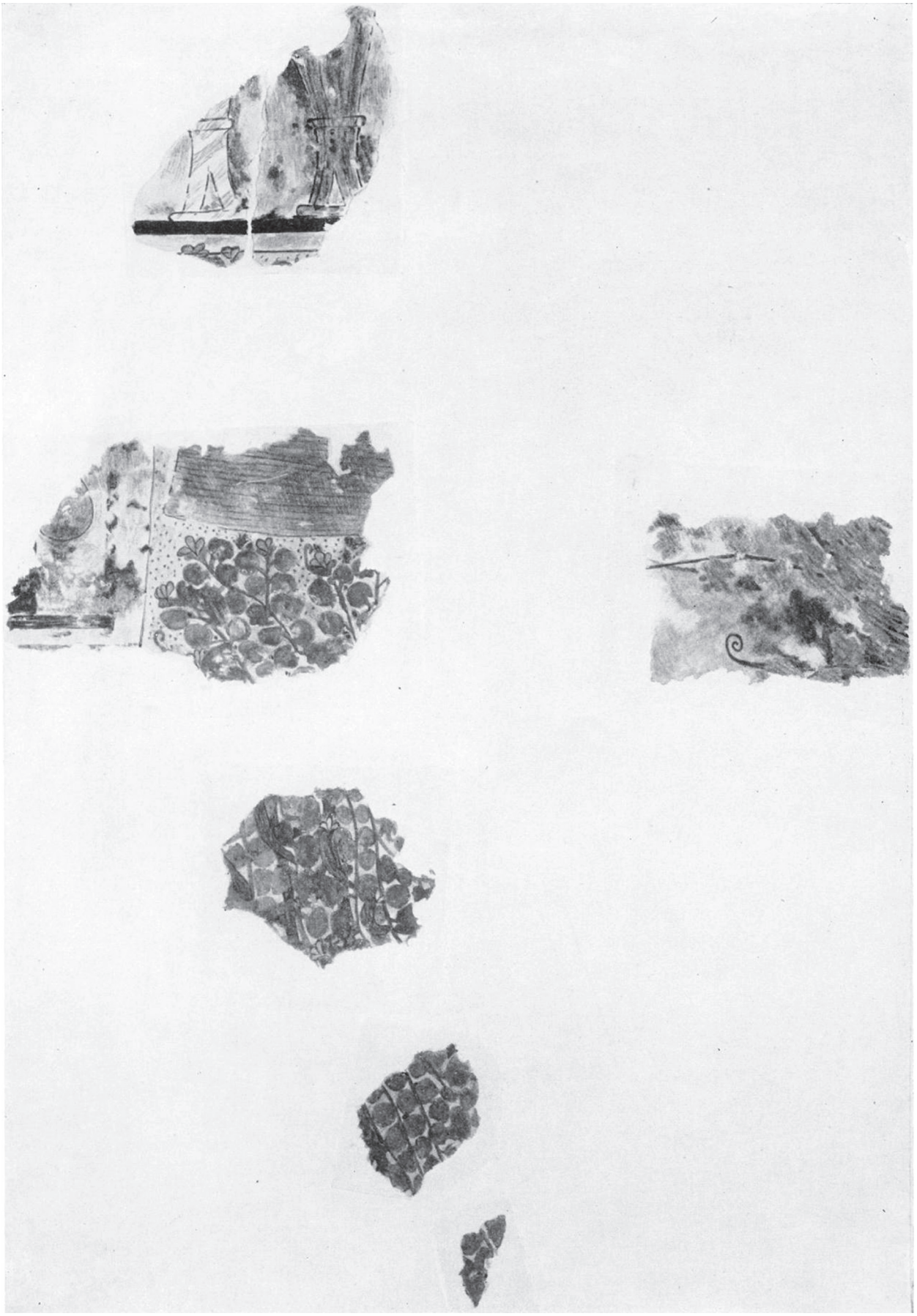

Fig. 3 Fragments of painted decoration from the tomb of Djehutyhotep II at Deir el-Bersha, representing a plant of the gourd family, *Cucurbitaceae*. After Smith 1951, Pl. 19.

and the gourd-like fruit are quite different from that of the grape arbor, a small fragment of which is included on the right. The little flowers are yellowish-buff outlined with red and the pinkish background, stippled with red, seems to be intended to represent sandy ground. It is only in hunting scenes that there is any sort of parallel for this background. It is separated from the ordinary gray ground color of the wall by a red line, both in the area above the green basket, beneath the black horizontal register which supports the blue jar and the yellow striped white jar set in stands, and again on the left where the man carrying a pink jar stands on a black register line and is further marked off by a vertical black border. Beneath this man there are traces of green background for the area below which thus must again have contained some sort of plants."[17]

The fragments that make up the vine-on-a-trellis scene can now be complemented by three others, which were discovered and mentioned by Newberry and were donated by The Egypt Exploration Fund to the British Museum (see above). Pieces EA71520 (Fig. 4),[18] EA71525 (Fig. 5)[19] and EA71528 (Fig. 6)[20] display the leaves, flowers and fruit of what appears to be the same vine trained over a red trellis. EA71525 is especially interesting because it shows a red separating line (already noted by Smith in reference to the Harvard fragments) that marks the right border of the scene (Fig. 5). The orientation of this fragment is clear due to the presence of two hieroglyphic signs upon a grey background: part of an arm (D36) and a loaf of bread (X1). On current evidence it is impossible to state whether the inscription belonged to this scene or to a neighbouring one.

The fragmentary state of preservation only allows for a tentative reconstruction of the vine-


Fig. 4 BM EA71520 © Courtesy of the Trustees of the British Museum.


Fig. 5 BM EA71525 © Courtesy of the Trustees of the British Museum.


Fig. 6 BM EA71528 © Courtesy of the Trustees of the British Museum.

17 Smith 1951, 328.

18 London, The British Museum, inv. no. EA71520. See http://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=121701&partId=1&searchText=71520&page=1 (accessed 10 February 2016).

19 London, The British Museum, inv. no. EA71525. See http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&assetid=58719001&objectid=121716 (accessed 10 February 2016).

20 London, The British Museum, inv. no. EA71528. See http://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=121610&partId=1&searchText=71528&page=1 (accessed 10 February 2016).

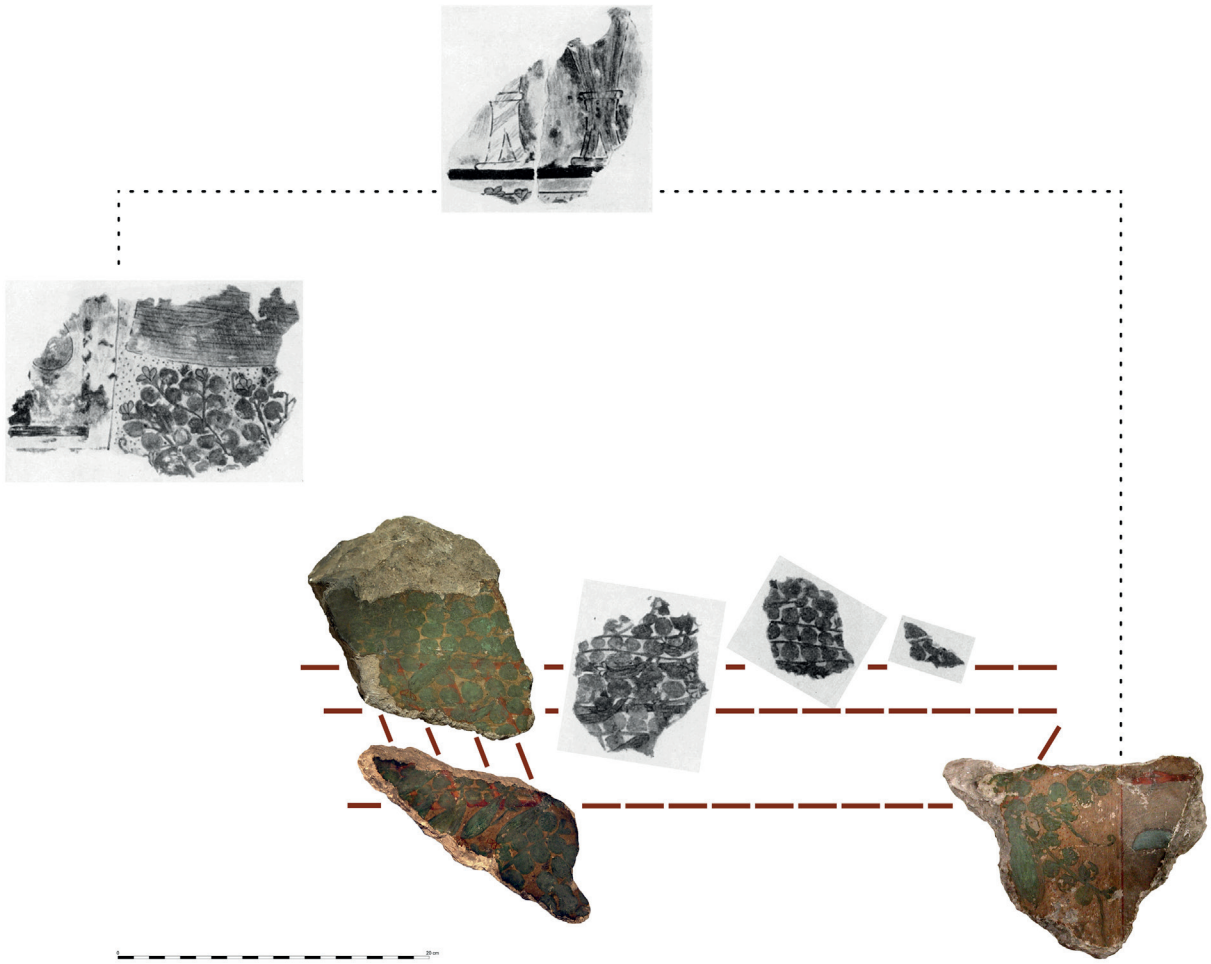

Fig. 7 Tentative reconstruction of the scene representing the cultivation of *Cucumis melo* in the tomb of Djehutyhotep II at Deir el-Bersha. The fragments in colour are kept in the British Museum (EA71520, EA71525, EA71528), the fragments in grayscale were published by Smith (1951, Pl. 19). The latter fragments were published without scale, so their size in the reconstruction is approximate.

on-a-trellis scene (Fig. 7), which extended over two registers (the second and third, according to Smith; Fig. 2). Some observations can be made, particularly with regard to the supporting frame. The traces of a red trellis, on at least five of the surviving fragments,[21] indicate that there were at least three horizontal beams, with a set of diagonal cross-beams between them that run parallel to each other, from top left to bottom right. This reconstruction is largely based on fragments EA71520 and EA71528, which display fruit that hangs down as it would from a trellis. The orientation of the pieces can be estimated from this. In EA71520 the trellis would have been in the lower part of the fragment, and that in EA71528 would have been in the upper part. Further, EA71528 only features one horizontal beam with no diagonals running down from it, and it is thus possible that it represents the lowest beam of the trellis. If so, the fragment would have been situated somewhere beneath EA71520 in the scene. Whether the trellis was a horizontal grid, a fence shown from above, or had the form of an arbour will remain unclear until new fragments are discovered.

The presence of a bag in what would probably have been the upper left part of the scene suggests containers to be filled with, or already containing, fruit. This is typical for all related scenes on the wall, and there might have been workers occupied with collecting the fruit.

The scene is remarkable for several reasons. To the best of my knowledge, the representation of a vine with a cucumber- or gourd-like fruit is extremely rare in Egyptian art, and its cultivation

[21] All three fragments from the British Museum, and the second and third fragment from the bottom in Fig. 3.

with the aid of a trellis is unparalleled and deserves further attention. Gardening scenes (excluding those related to wine production and orchard scenes) are infrequent and are usually limited to illustrations of vegetable patches, though gardening was an indispensable part of food production. The scene in the tomb of Djehutyhotep II is therefore striking, and proper identification of the plant in the trellis is needed.

**Cucumber, bottle gourd, watermelon or melon?**

The plant represented in the scene almost certainly belongs to the gourd family, *Cucurbitaceae*, which encompasses species such the cucumber (*Cucumis sativus*), bottle gourd (*Lagenaria siceraria*), dessert watermelon (*Citrullus lanatus*) and vegetable melon (*Cucumis melo*), which are traditionally thought to have been cultivated in ancient Egypt. These plants are annual vines featuring tendrils, white or yellow flowers and rounded, elongated, oval, or bottle-shaped fruit.

The wall painting at Deir el-Bersha depicts a densely-growing vine with many arms or branches that feature numerous leaves. The leaves are green and rather small, being almost the same size as the flowers, and are alternately distributed along the vine's branches. They are of orbicular or circular shape and where shown their petioles are short and thin, but in most cases these were omitted and the leaves seem to be directly attached to their branches (especially in the area along the trellis). The tendrils do not appear to branch, and are only shown near the apices of the vine's branches. According to Smith, the Harvard fragments feature small yellow flowers with red outlines, but apparently only at the ends of the branches and not at the leaf axils. This rendering indicates that the artist's intention was to fill as much space as possible, and that the plant was rendered schematically, rather than naturalistically.

Nevertheless, the artist included a number of details that might be used to identify the fruit. The British Museum fragments contain at least seven images of elongated fruit that is of the same green colour as the leaves and branches. The examples on EA71520 and EA71528 (Figs. 4, 6) are shorter and oblong, with acute stylar and peduncular ends, the former of which are wider than the latter. Each fruit has a corolla clinging to the stylar end. These corollas show three petals in profile, rather than the five expected on cucurbit flowers, and are coloured like those on the Harvard fragments: yellow with red outlines. The body of the fruit is elongated and features longitudinal striations, indicating furrows or perhaps stripes. The fruits are straight and approximately as long as three leaves placed next to one other. Fragment EA71525 (Fig. 5) stands out because the represented fruit is ca. 1.5 times larger than the other examples, and it is possible that a longitudinal split has been depicted.[22] In contrast to the others, the fruit attested on one of the Harvard pieces is somewhat curved or serpentine (the third fragment from the bottom in Fig. 3).

Even if the vine and its fruit have been rendered in a simplified, rather than naturalistic, manner, there are several aspects which can help to determine the species, including the colour of the flowers and shape of the fruit.

In their study on cucurbits in the Roman period, Jules Janick *et al.* stressed the importance of studying a plant's iconography together with literary and archaeobotanical evidence, in order to collect information about the presence of taxa in antiquity.[23] They noticed that even if the accuracy of the illustrations is often questionable, and identification proves to be difficult, certain characteristics of the plant, its fruit for example, can provide essential hints. Naming conventions are perhaps less useful. As well as analysing two- and three-dimensional art, Janick *et al.* also undertook a critical review of writings from the first century AD, uncovering incorrect translations of Latin and Hebrew designations that have mislead researchers since their publication. It is still common for names to be confused, and this should be borne in mind when dealing with *Cucurbitaceae*: "there may be no other family of plants in which misuse of names has been so widespread."[24]

In recent years, several useful studies concerning the presence of cucurbits in the Mediterranean region in antiquity and the medieval period have been published, and the observations made within them offer valuable insights into the topic. These will be considered below.

[22] The area along the entire length of the fruit's right-hand outline is lighter green, but the reason is unclear. It might be interpreted as a split, but the difference might also be the result of colour degradation.

[23] Janick, Paris and Parrish 2007, 1442.

[24] Janick, Paris and Parrish 2007, 1453.

*Cucumber* (Cucumis sativus)

Newberry, without any hesitation, identified the long green fruit in the fragments he mentioned in the publication as cucumbers.[25] In 1890, a few years before the Deir el-Bersha survey, he had published archaeobotanical finds from Kahun that included plant remains (leaves and stems) that were said to be *Cucumis sativus*, and this appears to have influenced him.[26] In early accounts of cucurbits in Egypt it was widely accepted that cucumbers were known to the ancient Egyptians, and were depicted among the offerings as early as the Old Kingdom. Several depictions were identified with this fruit on the basis of shape and colour,[27] but such superficial examinations have proven to be incorrect. By 1924, Ludwig Keimer had doubted the presence of cucumber in ancient Egypt,[28] and more recently both Renate Germer and Douglas J. Brewer have shown that the fruit most readily confused with cucumber is the vegetable melon (*Cucumis melo*), another species of the same genus that looks very similar.[29] This confusion also applies to archaeobotanical remains, since even today cucumber and melon seeds "cannot be reliably distinguished."[30]

Indeed, the identification of the Deir el-Bersha vine with the cucumber is the least probable option. The most recent analyses of pictorial and textual material from across the Mediterranean region have demonstrated that there is no unequivocal evidence for cucumbers in this area until the fifth century AD:[31] the fruit illustrated and described in antique sources, and confused with the cucumber, was actually *Cucumis melo* (see below). The cucumber originated on the Indian subcontinent and was probably introduced into Europe via two different routes: overland from Persia into eastern, central and northern Europe (before the Islamic conquest); and oversea from Persia or the Indian subcontinent into Andalusia (during the Islamic period) and from there to western and southern Europe.[32]

There is thus no explicit proof that cucumbers were cultivated in Egypt during the Middle Kingdom, and the painting in the tomb of Djehutyhotep II must therefore illustrate some other species of the family. Even the scene's iconographic details speak against this identification. The fruit is not cylindrical but wider near the stylar end, and the longitudinal stripes (representing striation or furrowing) are not characteristic of cucumbers. Instead, a common feature of *Cucumis sativus* are tubercles capped with black or white 'spines'. Finally, the leaves preserved in the extant fragments are orbicular, whereas those of cucumbers are acutely pentagonal.[33]

*Bottle gourd* (Lagenaria siceraria)

*Contra* Newberry, Smith described the fruit in the Djehutyhotep II scene as being gourd-like. 'Gourd' is a generic term for cucurbits, but is often used to refer specifically to the bottle gourd (*Lagenaria siceraria*). The bottle gourd originates in Africa, and a wild example was recently found in Zimbabwe, so it is thus possible that it was known in northern Africa from a very early date.[34] Georg Schweinfurth identified a water-flask made of *Lagenaria* among the offerings in a burial at Dra Abu el-Naga, apparently the earliest found to date,[35] and published it as dating to the 12th Dynasty, although the 17th Dynasty seems more likely.[36] Nevertheless, Predynastic vessels whose forms resemble a bottle gourd suggest that the plant may have been present in Egypt since that period,[37]

25 Newberry 1895, 35.

26 Newberry 1890, 50. Germer (1985, 130) discussed the difficulties inherent in the proper determination of plant remains among the various *cucurbitae*, and doubted Newberry's identification. See also Vartavan and Asensi Amorós 1997, 88.

27 See e. g. Moussa and Altenmüller 1977, 169, Pl. 89, where all *Cucurbitaceae*, even those quite large and striped, are described as "*Gurke*."

28 Keimer 1924, 15.

29 Germer 1985, 130; Brewer, Redford and Redford 1994, 65.

30 Paris, Daunay and Janick 2012, 119.

31 Janick, Paris and Parrish 2007.

32 Paris, Janick and Daunay 2011; Paris, Daunay and Janick 2012.

33 Paris, Janick and Daunay 2011, 471.

34 Janick, Paris and Parrish 2007, 1454. See Decker-Walters *et al*. 2004.

35 Schweinfurth 1884, 314. See also Vartavan and Asensi Amorós 1997, 147.

36 Keimer 1924, 13, wrote that von Bissing described the finds from the Dra Abu el-Naga tomb as dating to the 17th Dynasty, and not to the 12th. However, it is not immediately clear whether Keimer meant the same burial, since he did not refer to Schweinfurth.

37 Keimer 1924, 13. See Petrie 1921, Pl. XVII.51–53. For a New Kingdom faience vessel that seems to imitate the shape of a gourd compare Schoske, Kreissl and Germer 1992, 169 (no. 90).

though there is very little pictorial evidence.[38] Pierre P. Koemoth has also demonstrated that ancient Egyptians most probably knew of the bottle gourd, or calabash, under the name *qbw*.[39] In contrast to Koemoth, Pommerening argued that the bottle gourd was called *bddw-k3*.[40]

In any case, the identification of the fruit depicted at Deir el-Bersha with the bottle gourd seems to be incorrect, because the illustration shows details that speak against this. The bottle gourd is an annual vine and is distinguished from the cucumber and melon by the colour of its flowers, which are not yellow but white.[41] The fruit is also very distinctive, can be quite large when ripe, and usually resembles a bottle with a narrow neck and rounded body. Enlargement of the peduncular end can also often be observed in the edible, long-fruited varieties, the fruit of which is consumed as a vegetable when immature and green. The broader varieties become useful as their fruit matures and desiccates, with their thick, lignified rinds being suitable for a variety of uses, especially as vessels for holding water and other liquids.

The fact that the flowers represented in the tomb of Djehutyhotep II are yellow instead of white, and the fact that the fruit is striated or furrowed, makes it improbable that the bottle gourd was being depicted. Moreover, even if the fruit represented in EA71525 appears to have a prominent rounded or bulbous peduncular end, which might make an identification with *Lagenaria* possible, the supposed longitudinal split would be more typical of *Cucumis melo* than a bottle gourd.[42]

*Dessert watermelon* (Citrullus lanatus)

In contrast to the cucumber and bottle gourd, the dessert watermelon (*Citrullus lanatus*) appears to have been positively identified among offerings represented in Old Kingdom scenes,[43] while the oldest seeds found in Egyptian contexts come from the Predynastic period.[44]

According to common belief, the watermelon derived from the colocynth (*Citrullus colocynthis*), a wild watermelon with a bitter taste, that was used in Egypt prior to its domestication as suggested by some prehistoric finds.[45] *Citrullus lanatus* var. *colocynthoides* is a botanical variety of dessert watermelon that has been cultivated in Egypt from Pharaonic times to the present day,[46] and is probably a living representative of the wild ancestor of the sweet dessert watermelon.[47] Harry S. Paris has recently shown that the dessert watermelon most likely originated in north-eastern Africa, where the wild watermelon, its putative ancestor, still grows.[48] The Old Kingdom examples may even indicate that the cultivation of the dessert watermelon had already begun by that time. The fruit was appreciated in antiquity as a source of clean water as well as a cooked vegetable.[49] It was probably neither bitter nor as sweet as the modern dessert watermelon, which has been eaten in the Mediterranean area since the 2nd century at the latest.[50] The ancient Egyptian names for the dessert watermelon and colocynth have not yet been determined with certainty.[51]

The fruit of *Citrullus lanatus* is usually large, rounded and striped, and thus easily differentiated from the vegetable melon, bottle gourd or cucumber.[52] Furthermore, its tendrils are branched and its leaves have pinnate lobes. The colocynth is comparable to the dessert watermelon, but its foliage, fruit and seeds are smaller. These characteristics preclude the possibility that the vine in the

38 See Germer 1985, 133; Koemoth 2004, 92–95. Compare e. g.: Janick, Paris and Parrish 2007, 1448, Fig. 2B.

39 Koemoth 2004. For possible representations of doubled bottle gourds in the so-called Botanical Garden of Thutmose III see Beaux 1990, 180–181.

40 Pommerening 2010, 53.

41 For *Lagenaria* in antiquity see Janick, Paris and Parrish 2007, 1450–1451, Fig. 4.

42 Janick, Paris and Parrish 2007, 1449.

43 Brewer, Redford and Redford 1994, 65–66, Fig. 6.2 (= Moussa and Altenmüller 1977, Pl. 89); Manniche 1999, Fig. p. 92 = Janick, Paris and Parrish 2007, 1448, 1454–1455, Fig. 2A. For a possible representation of a watermelon in the so-called Botanical Garden of Thutmose III, see Beaux 1990, 128–129.

44 Murray 2000, 634; Vartavan and Asensi Amorós 1997, 78.

45 Murray 2000, 633–634; Germer 2008, 228; Germer 1985, 127–128; Vartavan and Asensi Amorós 1997, 77.

46 Germer 2008, 228. Previously known under the name *Citrullus vulgaris* var. *colocynthoides*.

47 Paris 2015.

48 Paris 2015.

49 Paris, personal communication (18 November 2015). The oil contained within the seeds might also have been used.

50 Paris 2015 (esp. Fig. 3). For the domestication of watermelons see also Zohary, Hopf and Weiss 2012, 153–154. Cf. also Keimer 1924, 17–18.

51 See Keimer 1924, 133; Helck 1977, 922; Germer 2008, 227–228.

52 For differences between watermelons and melons see Paris, Amar and Lev 2012, Table 1.

tomb of Djehutyhotep II can be identified as a dessert watermelon or a colocynth.

*Vegetable melon* (Cucumis melo)[53]

The vegetable melon (*Cucumis melo*) was apparently the most common and widespread member of the *Cucurbitaceae* family in ancient Egypt, and was a popular vegetable crop.[54] Indeed, it was "probably the most widely grown and perhaps the most ancient in cultivation around the Mediterranean Sea," including Africa.[55] It is characterised by orbicular or rounded leaves without lobes, unbranched tendrils and yellow flowers. The fruit features a great variety of colours and shapes, from rounded to serpentine, is striped or furrowed and, when young, is downy or hirsute. The stylar end is usually wider than the peduncular end, and the serpentine forms can be very long. Numerous examples of the possible shapes and their representations in Egyptian art were collected by Keimer, including both two-dimensional illustrations and models.[56] The ancient Egyptian name for *Cucumis melo*, attested since the Old Kingdom, was apparently *sšp.t* or *šsp.t*,[57] and it was used as a food and in medicine.[58]

In all probability this is the cucurbit that was illustrated in the tomb of Djehutyhotep II. The colour of the flowers, and the shape of the leaves, tendrils and fruit all speak to this interpretation. Another important factor is the deliberate rendering of the sandy ground in the painting (somewhat pink, with red dots) that was noticed by Smith. Vegetable melons prefer sandy or sandy loam soils, such as those found on the alluvial banks of the Nile.[59]

The name *Cucumis melo* encompasses a number of cultivar-groups, two of which have been common in ancient Egypt since the Old Kingdom at the latest: adzhur melons (the *Adzhur* Group), and snake melons (the *Flexuosus* Group), that together are known under the name *chate*.[60] Adzhur melons are comparatively short, with a length-to-broadest-width ratio of 3:1 or less, whereas snake melons can be much longer, having a ratio of 4:1 or more,[61] which often results in curved, serpentine forms.[62] Neither group has sweet fruits, but they are pleasant if insipid when young and edible, becoming sour as they ripen.[63]

The snake melon was more common in late antiquity than the adzhur melon (or at least its images are more numerous), and was thus apparently much preferred. Longer variants of cucurbits have proportionately smaller seeds and seed cavities.[64] According to most recent analyses, the long-fruited melon was named *sikyos* in Greek, *cucumis* in Latin and *qishu'im* in Hebrew, and it is still eaten today in Anatolia, North Africa (especially Egypt), and the Middle East under the name *faqqous*.[65] According to Pliny the Elder, a first-century Roman writer, the round-fruited melon was a new introduction.[66] This was known as

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53 Also called the cucumber melon, see Laghetti, Accogli and Hammer 2008.

54 Germer 1985, 128–129.

55 Janick, Paris and Parrish 2007, 1454. Sebastian *et al*. (2010) have recently demonstrated that the vegetable melon, like the cucumber, is of Asian origin. See also Zohary, Hopf and Weiss 2012, 154–155.

56 Keimer 1924, 14–17, 171. For representations of doubled melons see Beaux 1990, 167–169.

57 Lemma-no. 144920 in *Thesaurus Linguae Aegyptiae*: http://aaew.bbaw.de/tla/index.html (accessed 11 August 2015). See Keimer 1924, 130–133; Schoske, Kreissl and Germer 1992, 31.

58 Germer 2008, 140, 243.

59 Keimer 1924, 17; Germer 1985, 129; Murray 2000, 635; Germer 2008, 242.

60 *Cucumis melo* L. var. *chate* (Hasselqu.) Naud, see: Germer 2008, 242. See also Janick, Paris and Parrish 2007, 1448–1449, Fig. 2. Archaeobotanical finds indicate that *chate* was already known in the Predynastic period, see Murray 2000, 635; Germer 2008, 243; Vartavan and Asensi Amorós 1997, 88.

61 Janick, Paris and Parrish 2007, 1453–1454.

62 For the snake melon in antiquity and the medieval period see Janick, Paris and Parrish 2007, 1449–1450, Fig. 3; Paris 2012.

63 Janick, Paris and Parrish 2007, 1447, 1454. Sweet *Cucumis melo* was apparently cultivated in Central Asia, where it was known by the middle of the 9th century AD, and from where it spread westwards; see Paris, Amar and Lev 2012. See also Paris, Janick and Daunay 2011, 482: "A non-sweet dessert melon was familiar around the Mediterranean as early as Roman times and known to Pliny as *melopepo* […]. Apparently, truly sweet melons, like the casabas, muskmelons (*Reticulatus* Group) and cantaloupes (*Cantalupensis* Group) so familiar today, were absent or unrecognized in much of Europe throughout the medieval period."

64 Janick, Paris and Parrish 2007, 1455; Paris 2012.

65 For these and other names listed in the text, see Janick, Paris and Parrish 2007; Paris, Janick and Daunay 2011; Paris, Daunay and Janick 2012 (esp. Table 1); Paris 2012.

66 Rackham 1950 (Pliny the Elder, Historia Naturalis, Book 19, 23:67).

*melopepo*, *melopepon*, and *melafefon* of Latin, Greek, and Hebrew, respectively. The word *qishu'im* and the Arabic word *qitha* refer both to adzhur and snake melons, though adzhur melons are referred to as *'aggur* in Egyptian Arabic (and as *'ajjour* in classical Arabic). The adzhur melon is sometimes called the 'Egyptian cucumber'.[67] These vegetable melons gradually came to be replaced in Europe at some point after the fifth century AD by cucumbers, which are similar in shape and taste but are more suitable for cooler climates.[68] As relict crops, they are still cultivated in some places (notably Apulia) and known by the names *meloncella*, *carosello* or *barrattiere* (examples of the *Adzhur* Group) and *tortarello* (an example of the *Flexuosus* Group).[69]

It is difficult to determine which cultivar-group was intended for the tomb of Djehutyhotep II. If the fruit attested on EA17525 (Fig. 5) actually features a split, it could be understood as an illustration of a fully developed melon, a mature fruit, as perceived by the painter.[70] Since the form is not curved and the length-to-broadest-width ratio is about 3:1, it would probably be an adzhur melon. The length-to-broadest-width ratio of other examples is mostly comparable (ca. 3:1) but the form varies, because some of the fruit is straight and some is curved (Figs. 3–7). An example attested on one of the Harvard pieces (upper part of the third fragment from the bottom in Fig. 3) is more slender, curved, and the length-to-broadest-width ratio exceeds 4:1, and it may thus represent a snake melon. It is quite possible that the artist intended to illustrate plants and the fruit of both groups.[71] Another possibility that ought to be considered is that both variants might have been grown together, or at least close to one other, and that this would have resulted in cross-breeding and fruit of intermediate characteristics.[72] The stylistic nature of the painting and its fragmentary state of preservation mean that it is not possible to determine which of these possibilities is the more likely.

Nevertheless, there are several well-preserved representations of *Cucumis melo*, including two-

Fig. 8 Pile of offerings represented on the coffin of Sebek-'a (probably late 12th Dynasty), with three images of *Cucumis melo*, one of them striped. After Steindorff 1901, Pl. II (detail).


Fig. 9 Cosmetic box BM EA5980 (New Kingdom) © Courtesy of the Trustees of the British Museum.

67 Germer 1985, 129.

68 Paris, Janick and Daunay 2011, 483; Paris 2012, 37. For medieval illustrations of *Cucumis melo* see Paris, Janick and Daunay 2011, Figs. 1C, 2B, 2D, 3B, 3C, 4B.

69 Laghetti, Accogli and Hammer 2008. For an image see e. g. http://www.ortaggipugliesi.it/index.php?carosello-e-barattiere (accessed 11 August 2015).

70 A split would speak for a mature fruit, but Harry S. Paris (personal communication, 18 November 2015) has pointed out that mature fruit would be yellow rather than green, and that its flesh would be dark instead of light.

71 For a medieval representation of two cultigens of the *chate* melon see Paris, Janick and Daunay 2011, 477, Fig. 2B.

72 Janick, Paris and Parrish 2007, 1455.

dimensional illustrations (Fig. 8),[73] models,[74] and a cosmetic box (Fig. 9),[75] that bear striking resemblances to the fruit on EA17525, showing distinct stripes. They have been often published as *chate* melons.

## Conclusion

The representation of the cultivation of vegetable melons using a trellis in the tomb of Djehutyhotep II at Deir el-Bersha is unparalleled in Egyptian art, and might be considered an innovation of the Middle Kingdom. Nevertheless, it is possible that cultivation of such melons, an edible favourite since the earliest times, was illustrated in Old Kingdom but has not been recognised as such. Nathalie Beaux, for example, has argued that a scene in the tomb of Mehu at Saqqara (6th Dynasty) shows cultivation of the vegetable melon, even though it was identified as depicting a grape harvest in the original publication, and is comparable with similar scenes from that period (including the use of forked sticks as supports).[76] Her arguments are coherent but not entirely convincing, because she argued that the fruit depicted in the scene is drop-shaped, whereas grapes are usually pointed. This is often the case in Old Kingdom images of grapes,[77] although there are also counterexamples.[78] In the Middle Kingdom the pointed shape disappeared and only drop-shaped grapes were illustrated.[79] It is also noteworthy that the scene Beaux describes is set next to a fruit tree, which is also typical for grape-harvesting scenes. On the other hand, the fruit in the baskets on the ground have curved upper ends and rather resemble a *Cucurbitaceae*, but without knowing the colour of the fruit it is not possible to offer a convincing identification.

Beaux also suggested that the grape-gathering scene depicted in the tomb of Djehutyhotep II actually represents the collection of vegetable melons instead of grapes.[80] She described the fruit as being green and striped or dashed, but fragments of the scene kept in the British Museum clearly show that the grapes are drop-shaped and blueish, with the individual berries easily discernible.[81] This is typical for all Middle Kingdom scenes of this type.[82]

Nevertheless, the illustration of a plant from the *Cucurbitaceae* family at Deir el-Bersha is not necessarily unique in the Middle Kingdom. The Beni Hasan tomb of Khnumhotep II, another important official from the 12th Dynasty, also appears to provide an example (Fig. 10). The fifth register on the western half of the north wall displays a gardening scene in which workers are shown watering a vegetable patch.[83] Next to the patch there is an area of water that could be interpreted either as a pond or as a schematic rendering of the Nile. One of the workers stands 'upon' the water, but it is the area 'below' the water that deserves further attention. It seems to be painted

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73 See e. g. Steindorff 1901, Pl. II (top left, three examples, one of them striped); Willems 1988, 114–115.

74 For Middle Kingdom models cf. Keimer 1929, 92–93, Pl. VII.2. For New Kingdom models see Keimer 1924, 15, 171 (no. 6 = Berlin 6816; no. 7 = Petrie 1891, Pl. XVII.11; Germer 1985, 129); Darby *et al*. 1977, Fig. 17.13 (Dokki Agricultural Museum).

75 London, The British Museum, inv. no. EA5980. See http://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=118822&partId=1&searchText=5980&page=1 (accessed 10 February 2016).

76 Beaux 1991, 207, Fig. 3, Pl. 1. See: Altenmüller 1998, 148–149, Pl. 43b.

77 See e. g. Moussa and Altenmüller 1977, Pl. 38; Lepsius 1859, Pl. 53.

78 See e. g. Petrie 1898, Pl. XVI.

79 Compare http://www.meketre.org/repository/search: Theme: *Manufacture and storage of wine* (accessed 10 February 2016).

80 Beaux 1991, 207–212, Fig. 4, Pl. 2. See Newberry 1895, 35, Pls. XXIV, XXVI, XXVII.8; Smith 1951, 324–326, Fig. 2, Pl. 19. See also http://www.meketre.org/repository/theme/1146902 (accessed 10 February 2016).

81 London, The British Museum, inv. no. EA71529. See http://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=121706&partId=1&searchText=71529&page=1 (accessed 10 February 2016). See Newberry 1895, Pl. XXVII.8. For a photograph of the right part of the scene see http://www.osirisnet.net/popupImage.php?img=/tombes/el_bersheh/djehoutyhotep/photo/djehoutyhotep_36.jpg&sw=1920&sh=1080&wo=0&so=85 (accessed 10 February 2016).

82 See e. g. Kahl, El-Khadragy and Verhoeven 2008, Fig. 12 [Djefaihapi I]; Kanawati and Woods 2010, Photos 143–145 [Khnumhotep II]. For the tomb of Senet see http://www.osirisnet.net/popupImage.php?img=/tombes/nobles/antefoqer/photo/antefoqer60_unidia_bs_20302.jpg&sw=1920&sh=1080&wo=0&so=85 (accessed 10 February 2016).

83 Newberry 1893, 68, Pl. XXIX; Kanawati and Evans 2014, 39, Pl. 118. For drawings in colour see Cailliaud 1831, Pl. 33A; Rosellini 1834, Pl. XL.1; Champollion 1845, Pl. CCCLVIII.2.

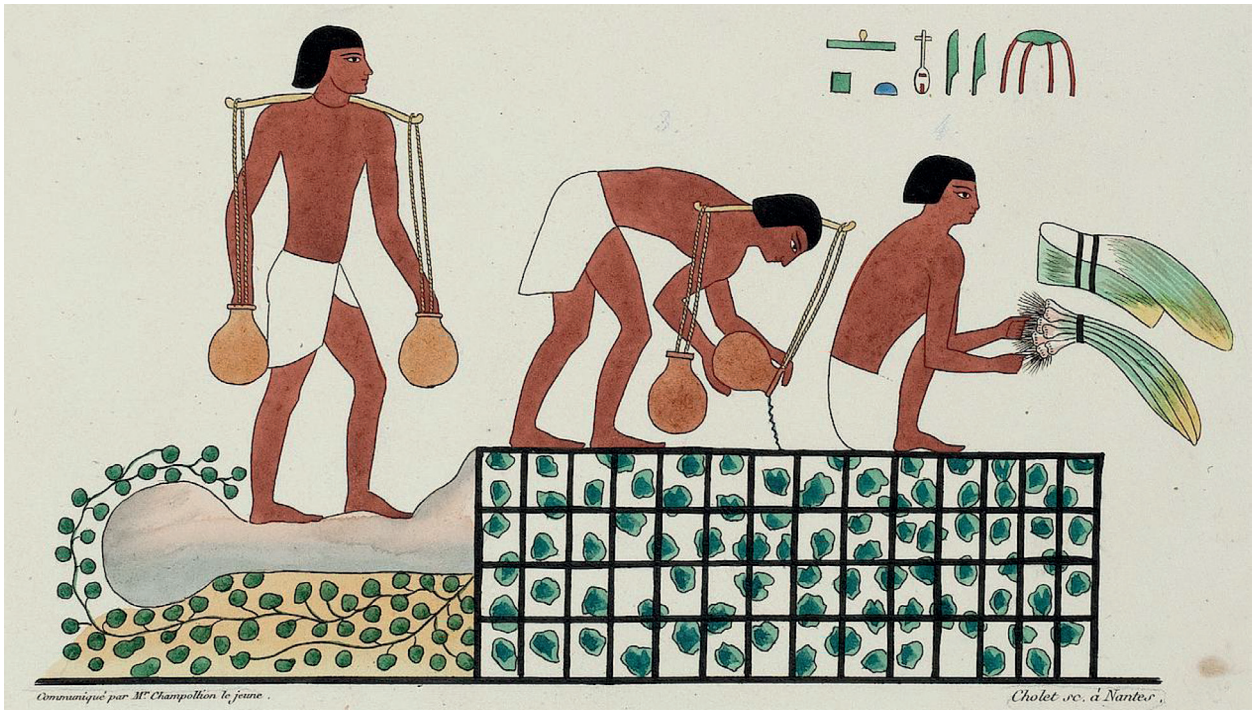


Fig. 10 Gardening scene depicted in the tomb of Khnumhotep II in Beni Hasan (BH 2), with a probable representation of a plant from the family *Cucurbitaceae* in the left part of the image. After Cailliaud 1831, Pl. 33A.

yellow, probably to indicate sandy ground, and a vine is depicted as growing over it. The plant does not feature any fruit, but it has long branches with numerous small round leaves. Its appearance strongly resembles the plant depicted in the tomb of Djehutyhotep II and its presence in a gardening scene, upon a sandy ground next to water (possibly a river bank), would also speak to an identification with a species of *Cucurbitaceae*.[84]

This short glimpse into the iconography of 12th Dynasty has hopefully demonstrated that the reliefs and paintings of Middle Kingdom still contain a great deal of valuable information, and deserve further investigation.

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[84] A plant with rounded leaves and a long, green fruit is depicted on a New Kingdom faience tile from Amarna that is now kept in the Petrie Museum (UC413), and might also belong to the family *Cucurbitaceae*, but the fragment is too small to any conclusions to be drawn. See Samson 1978, 87, Pl. VI (top right).

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