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Flowers of Re: The floral origins and solar significance of rosettes in Egyptian art

By

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Master of Arts

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Flowers of Re: The floral origins and solar significance of rosettes in Egyptian art

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Abstract

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Shelley Burian

Throughout the Pharaonic period in Egypt an image resembling a flower, called a rosette, was depicted on every type of art form from architecture to jewelry. The identification and significance of the rosette motif has been debated by scholars since the mid-nineteenth century. The wide range of variations grouped under this title has led to doubts over the motif's relationship to actual flowers. This thesis demonstrates that the unifying characteristic features of all rosettes are concentric circles rather than radial symmetry as have been previously suggested. These features have a close correspondence with the morphology of the *Compositae* family and many of the features of *Compositae* rosettes that previous scholars have used to argue against any connection to nature indicate the reverse. Scholars who dismissed the rosette motif as pure invention with no further purpose than to provide beautiful floral decoration ignored several of the founding principles of Egyptian art and the ancient Egyptians' relationship with the natural world. The balance between symbolism and naturalism which pervades all Egyptian images of nature is very much present in *Compositae* rosettes. The composition of *Compositae* rosettes, which emphasizes solar colors and circular forms, closely resembles the hieroglyph *r'* and indicates that they were used as a floral form of the sun, an incarnation of the power of Re that could be used by both royal and non-royal Egyptians.

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Throughout the Pharaonic period in Egypt an image resembling a flower, called a rosette, was depicted on every type of art form from architecture to jewelry. The identification and significance of the rosette motif has been debated by scholars since the mid-nineteenth century. The wide range of variations grouped under this title has led to doubts over the motif's relationship to actual flowers.[1] I will demonstrate that the unifying characteristic features of all rosettes are concentric circles rather than radial symmetry as have been previously suggested. These features have a close correspondence with the morphology of the *Compositae* family. This similarity suggests that a large number of species from this group are in fact the origin of almost every type of rosette, the group of which I propose to rename *Compositae* rosettes. It is also probable that the *Compositae* family exerted influence over the one type of rosette which has its origins in the flowers of the *Nymphaea* or water lily family. Many of the features of *Compositae* rosettes that previous scholars have used to argue against any connection to nature indicate the reverse. A range of variations from extremely abstract to detailed, unusual arrangements of color, and an overall emphasis on geometric shapes are key design elements of all animals and plants within Egyptian art. The composition of *Compositae* rosettes, which emphasizes solar colors and circular forms, closely resembles the hieroglyph *r'* and indicates that they were used as a floral form of the sun, an incarnation of the power of Re that could be used by both royal and non-royal Egyptians.

Study of the rosette motif began in the nineteenth and the early twentieth centuries studied various aspects of the rosette motif. The main questions scholars sought to address were

[1] H. J. Kantor, "Plant Ornament: Its Development in the Ancient Near East" (Oriental Institute, University of Chicago, 1945). 127. While this manuscript based on the author's dissertation is the most complete work to date on the Egyptian rosette she died before completing it. Her citation system was cryptic and there is not bibliography. Thus in several cases I have referred to her footnotes rather than cite an author directly.

the motif's cultural and natural affiliations. Ludwig von Sybel and Georg Streng argued for a connection between the Egyptian and Mesopotamian rosette.[2] Besides Mesopotamia, Streng also suggested that all rosettes in the Near East and Egypt could have been derived from Aegean and Cretan sources.[3] Percy Goodyear and other scholars argued the reverse, that the Egyptian rosette was the source for the design in the rest of the Near East.[4] The inspiration of the motif, whether floral or geometric, also created a lively debate. The main difficulty encountered by scholars regarding its relationship to actual plants was the range of style from extremely realistic to completely abstract.[5] Most scholars agreed that the source of the motif was vegetal. The only dissenting voice among the call for a vegetal origin was that of Gustave Jéquier, who argued that the motif, due to its simplicity, was purely geometric and no natural source could possibly be identified.[6] Several authors, including William Matthew Flinders Petrie, attempted to bridge the vegetal and abstract camps and argue that the evidence suggests that some of the different variations had a specific floral origin, while others are purely geometric.[7]

Many of the species that were cited as possible inspirations were from the *Compositae* family. Borchardt's argument that plants of the *Chrysanthemum/Glebonis* genii were the inspiration for the majority of rosette motifs was the most widely accepted.[8] Streng argued that the species *Chrysanthemum coronarium L.* and *C. leucanthemum L.* were the sources for the

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[2] Ibid. 127-129. Georg Streng, *Das Rosettenmotiv in Der Kunst U. Kulturgeschichte* (Munich, 1918).
[3] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 128. Streng, *Das Rosettenmotiv in Der Kunst U. Kulturgeschichte*. 32. von Ludwig Sybel, *Kritik Des Ägyptischen Ornaments* (Berlin, 1883). 17.
[4] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 128, see footnote 4. Percy E. Goodyear, *Grammer of the Lotus* (London, 1891). 99-104, 149.
[5] W. M. Flinders Petrie, *Egyptian Decorative Art : A Course of Lectures Delivered at the Royal Institution by W.M. Flinders Petrie* (London : Methuen, 1920). 56-57.
[6] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 130. Gustave Jéquier, *Décoration égyptienne. Plafonds et frises végétales du nouvel empire thébain (1400 à 1000 avant J.-C.)* (Paris: Librairie centrale d'art et d'architecture, 1911).
[7] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 127, 130. Petrie, *Egyptian Decorative Art*. 56-60.
[8] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 129, see footnotes 9-11.

rosette based on a connection between the Isis-Ishtar cult and the cult of the dead, drawing more on New Kingdom material than that of earlier periods.[9] Newberry chose to focus on the origin of a single type of rosette, those with yellow centers and white petals, which he argued were inspired by the *Anthemis* genus.[10]

There was a second group of candidates for a floral source, the *Nymphaea* and the *Nelumbo* families first proposed by Alois Riegel.[11] His basic premise was that the rosette motif showed the form of the aquatic flowers in their fully open state. He cited four different aspects of the *Nymphaea* flowers as the sources for the various features of rosettes: the ovary stigma, the placement of petals, the viewing angle, and the combination of flowers with buds.[12] Despite the large number of rosettes that lack clear visual connections to these blossoms, this argument gathered a considerable following including William Henry Goodyear who took up the subject in his monograph on the "lotus" motif in ancient art. [13] Percy E. Newberry also accepted parts of the argument for more unusual rosettes features such as the connection between the shape of ovary stigma and the obovate rays of certain rosette variations.[14]

After this spurt of early interest, the rosette motif has not elicited much comment from Egyptologists. There have been very few dedicated publications on the subject with remarks restricted to the context of wider topics. Schneider is one of the few scholars to use a rosette as a main part of an argument although rosettes in general are not the subject of his article.[15] He

[9] Ibid. 128-129. Streng, *Das Rosettenmotiv in Der Kunst U. Kulturgeschichte*. 28-39, 60.
[10] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 129, see footnote 10.
[11] Ibid. 129-130.
[12] Ibid. 129, see footnote 12.
[13] Goodyear, *Grammer of the Lotus*. 19, 103-104.
[14] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 129 footnote 12. Goodyear, *Grammer of the Lotus*. 104.
[15] Thomas Schneider, "Das Schriftzeichen 'Rosette' Und Die Göttin Seschat," *Studien Zur Altägyptischen Kultur* 24 (January 1, 1997): 241–67.

argued that the Predynastic rosettes found on the Narmer Palette and the mace of the Scorpion King are puns for the word *nb* or "lord" which also meant "lotus".[16] This linguistic argument is then used to discuss the various parts of the headdress of the goddess Seshat.[17] This article presents a possible connection between kingship and the rosette motif but does not push this idea past the Predynastic era to other later variations of rosettes. The analysis of the rosette is essentially supporting evidence for his larger argument concerning Seshat and is not elaborated on. The fact that the "hieroglyph" does not survive in later versions of the script and that the specific composition of Predynastic rosettes does not continue to be produced means that this argument has little relevance to a discussion of the motif in general.

In her book on the botanical garden reliefs from the Akh Menu at Karnak built during the reign of Thutmose III, Nathalie Beaux remarks on rosettes in connection with the two rosette-shaped blossoms found in the garden. She believes that it is impossible to cite a single source for the motif, although *Compositae* species are among those that possibly could have influenced it.[18] Nigel Hepper addresses the identification of the rosettes on a pair of sandals found in the tomb of Tutankhamun, although he does not mention other representations of the motif in the tomb such as on the king's jewelry, furniture or chariot. In his book he identifies these rosettes as *Anthemis pseudocotula* following Newberry, which is interesting considering that these were among the rosettes that Riegel used to support his *Nymphaea/Nelumbo* origin.[19]

Although Lise Manniche does not address the issue of the rosette motif in her books on plants in Egyptian art and culture, she includes a species from the *Compositae* family in her

[16] Ibid. 241, 252.
[17] Ibid.256, 265.
[18] Nathalie Beaux, *Le Cabinet de Curiosités de Thoutmosis III: Plantes et Animaux Du "Jardin Botanique" de Karnak* (Louvain: Peeters Press and Department Orientalistiek, 1990). 108-109.
[19] Frank Nigel Hepper, *Pharaoh's Flowers : Botanical Treasures of Tutankhamun* (London: HMSO Publications, 1990); Kantor, "Plant Ornament: Its Development in the Ancient Near East." 129.

herbal (*Anthemis tinctoria*). Inclusion in this work required that a plant be well documented in various ways: images, physical remains, and a mention in texts (Ancient Egyptian, Coptic, and Classical).[20] Manniche also gives insightful comments on how plants are represented in Egyptian art which provide pointers as to how the rosette motif can be connected to actual plants in spite of the apparent difficulties caused by an emphasis on geometry and abstraction.[21]

The great exception to this trend of academic apathy is Helene Kantor, who provides the most thorough study to date on the rosette motif in a chapter of an unfinished manuscript.[22] She describes all the variations of the motif chronologically to illustrate its diversity and trace formal developments across time but with limited success. She touches on the combination of rosettes with other plants in another chapter concerning the florist's trade in Egypt.[23] In her analysis, Kantor takes two approaches. She provides a chronological progression of the motif from the Predynastic through the New Kingdom, focusing on describing as many different examples as possible. Where this is impossible due to the large number of practically identical examples she selects several as representatives. When she reaches the New Kingdom, she alters this approach and provides both a chronology and a typology of the distinct varieties, including a formal analysis of the features of each group. Several varieties in fact developed during the Middle Kingdom but since the largest number come from the New Kingdom period she discusses them in the most detail in the New Kingdom section. Like Petrie, she attempts to forge a middle course between the vegetal and abstract origins. She urges caution in the citing of floral sources

[20] Lise Manniche, *An Ancient Egyptian Herbal* (Austin: University of Texas Press, 1989).61.
[21] Ibid. 159-162.
[22] Kantor, "Plant Ornament: Its Development in the Ancient Near East."
[23] Ibid. 199-254.

stating that unless a rosette is shown in a naturalistic context and possesses specific natural details (obvious petals, stems, and leaves) a vegetal origin cannot be assumed.[24]

All previous authors have limited themselves to the same questions of cultural and botanical origin. They have only examined the rosette motif's correspondence to their chosen candidates for its origin without looking at the wider context of Egyptian methods of representing all plants. I will conduct a formal analysis on a range of rosette variations to highlight the ways in which it is consistent with representations of the natural world in Egyptian art. I will also move beyond the question of identification and examine how rosettes' similarities and differences to other representations of sacred plants and animals reveal their role in the Egyptian worldview as a symbol of divine power. I have followed Kantor's lead in attempting to cover as many formal variations of the motif as possible but limiting discussion to single representatives of each. In addition, I have selected examples that show the rosette in all its various contexts: utensils, garments, jewelry, wall and ceiling decoration, furniture, coffins, and musical instruments. The majority of them are well known and published but others are fairly obscure and were selected for a variety of reasons. These reasons include an unusual composition, having the same or neighboring findspots, and presence in a significant context such as a natural landscape scene. My discussion will not follow a strict chronological line since as Kantor demonstrated there is no clear trajectory for the motif's development.[25] Instead I will provide a chronological overview of my examples and then analyze their various forms and contexts.

[24] Ibid. 127.
[25] Ibid.

Unlike Kantor, I will be excluding examples from the Predynastic period. Almost all Predynastic examples show rosettes fairly consistent in form composed of four to seven so-called petals which have a central rib and diagonal lines extending from either side of the central rib to the edge of the petal, called by Kantor hatching.[26] These rosettes are paired on some objects with twined snakes clearly of Mesopotamian origin. Others are found in more distinctly Egyptian contexts such as the Narmer Palette; one rosette is positioned on the back side right above the head of the attendant who stands behind the king under the raised mace.[27] Despite the appearance of this type of rosette together with Mesopotamian motifs, Kantor observes that they are unlike the types of rosettes used in Sumer at the time.[28] However, the unusual representation of the petals (they resemble leaves more than petals) and the fact that they do not reappear in any other period makes their origin doubtful and thus they will be left out of my analysis.

There are few examples of rosettes that survive from the Old Kingdom.[29] The earliest distinctly Egyptian rosettes are those found on the fourth dynasty limestone statue group of Prince Rahotep and his wife Nofret from Meidum, placed on the headband of Nofret (figure 1).[30] Examples of rosettes dating from the Middle Kingdom are also scarce. The princess Khnumet, buried at Dashur near the pyramid of her father Amenemhat II of the twelfth dynasty, owned two gold diadems both featuring rosettes (figures 2 and 3).[31] The Mistress of the House Senebtisy (a member of the family of the Vizier Senwosret) buried at Lisht near the pyramid of Amenemhat I

[26] Ibid. 131.
[27] Ibid. Gay Robins, *The Art of Ancient Egypt* (Cambridge: Harvard University Press, 1997). 33.
[28] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 130.
[29] Ibid. 131-133.
[30] Figure 1, Cairo Museum. Figure 81, page 102 in Andrews, Carol. *Ancient Egyptian Jewelry*. New York: Harry N. Abrams, 1997.
[31] Figure 2, Cairo Museum, number 52859. Figure 3, Cairo Museum, number 52860.

(the founder of the twelfth dynasty) was found with ninety-eight gold rosette hair ornaments (figure 4).[32]

The New Kingdom yields the largest number of rosettes, mostly from the eighteenth dynasty.[33] Like those dating from the Middle Kingdom they are found in sites or on objects associated with royalty and elites. Several types of beads were found in excavations of sites at the mortuary temple of Hatshepsut dating from the joint reign of Hatshepsut and Thutmose III (figures 5 and 6).[34] The tomb of the Three Foreign Wives of Thutmose III at Thebes contained two elaborate head ornaments with rosettes forming the majority of the decoration on each (figures 7 and 8).[35] The rare rosettes that appear as true flowers, meaning that they are shown growing out of the ground with stems and leaves, almost all appear during the reign of Thutmose III. The Botanical Garden reliefs of Thutmose III carved in the northwestern wing of the Akh Menu at Karnak show two rosettes as flowers encountered on the king's expedition (figures 9

[32] Cyril Aldred, *Jewels of the Pharaohs: Egyptian Jewellery of the Dynastic Period* (London: Thames and Hudson, 1971).113-114. Figure 4, Tomb of Senwosret (758), Pit 763, Memphite region, Lisht North. Metropolitan Museum of Art number 07.227.6-7.

[33] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 127.

[34]Figure 5, Faience rosette bead. Metropolitan Museum of Art number 05.4.43. Figure 6, Thirty-two rosettes. Temple of Hatshepsut, Foundation Deposit 7-9 (G-I), Thebes, Deir el-Bahri.18th Dynasty, reign of Hatshepsut and Thutmose III (New Kingdom). Metropolitan Museum of Art number 27.3.446c.

[35] Figure 7, Tomb of the Three Foreign Wives of Thutmose III, Thebes, Wadi Gabbanat el-Qurud, Wadi D. Metropolitan Museum of Art number 26.8.117a. Figure 8, Tomb of the Three Foreign Wives of Thutmose III, Thebes, Wadi Gabbanat el-Qurud, Wadi D. 18th Dynasty reign of Thutmose III (New Kingdom). Metropolitan Museum of Art, number 26.8.99.

and 10).[36] Similar rosettes are present in the tombs of Intef and Mentiywey from the same reign and dynasty, placed within scenes of deserts and hunting (figures 11 and 12).[37]

Excavations of the Malqata palace near Thebes built by Amenhotep III uncovered rosettes in found objects including tiles, inlays, and jewelry, and the decorative program of the palace itself (figures 13-15).[38] Tombs from this reign also contain other examples of rosette jewelry such as a medallion found in the Tomb of Merytre-Hatshepsut/Sennefer (KV 42) (figure 16).[39] The most naturalistic variations of the rosette motif come from the reigns of Akhenaton and Tutankhamun. Faience tiles from the Great Palace at Amarna show rosettes whose identity can be narrowed down to three species because of the detailed features of the inflorescences (flower heads) and foliage (figures 17 and 18).[40] The tomb of Tutankhamen, as can be expected, yields the highest number of rosettes in a single context: jewelry, funeral paraphernalia, furniture, and actual flowers (figures 19-23).[41]

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[36] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 131,145, 149. Beaux, *Le Cabinet de Curiosités de Thoutmosis III: Plantes et Animaux Du "Jardin Botanique" de Karnak*. 60, 108-109. Figure 19, Section of wall 31E showing plant 59. Akh menou monument, Karnak. 18th Dynasty, reign of Thutmose III (New Kingdom). Plate IX, top from Beaux, Nathalie. *Le Cabinet de Curiosités de Thoutmosis III: Plantes et Animaux Du "Jardin Botanique" de Karnak*. Louvain: Peeters Press and Department Orientalistiek, 1990. Figure 10, Section of line drawing of wall 31E showing plant 58. Akh menou monument, Karnak. 18th Dynasty, reign of Thutmose III (New Kingdom). Plate VII from Beaux, Nathalie. *Le Cabinet de Curiosités de Thoutmosis III: Plantes et Animaux Du "Jardin Botanique" de Karnak*. Louvain: Peeters Press and Department Orientalistiek, 1990.

[37] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 145. Figure 11, see figure IV 52 in H. J. Kantor. "Plant Ornament: Its Development in the Ancient Near East." Oriental Institute, University of Chicago, 1945. Figure 12, see figure 53 in H. J. Kantor. "Plant Ornament: Its Development in the Ancient Near East." Oriental Institute, University of Chicago, 1945.

[38] Figure 13, Rosette decoration. Metropolitan Museum of Art number 11.215.408. Figure 14, Rosette pendants. Metropolitan Museum of Art number 11.215.409. Figure 15, Fragment of ceiling painting. Metropolitan Museum of Art number 11.215.451.

[39] Figure 16, Metropolitan Museum of Art number 30.8.252.

[40]Rita E. Freed, Sue D'Auria, and Yvonne J. Markowitz, *Pharaohs of the Sun: Akhenaten, Nefertiti, Tutankhamen* (Boston: Museum of Fine Arts in association with Bulfinch Press/Little, Brown and Co., 1999). 137. Figure 17, Wall tile with floral inlays. Late 18th Dynasty, Royal Museum of Art and History, Brussels. Figure 18, Tile with floral inlays. Brooklyn Museum, Gift of the Egypt Exploration Society, number 35.2001.

[41] Figure 19, Pectoral with moon bark, necklace and counterpoise. Tomb of Tutankhamun, (KV62) Valley of the Kings, Thebes. Plate XIXc in Carter, Howard. *The tomb of Tutankhamun. Volume 3, The annexe and treasury: discovered by the late Earl of Carnarvon and Howard Carter*. E-Books Corporation, 2014. Also number 269K in Carter Catalog. Cairo Museum. Figure 20, Diadem of Tutankhamun depicting a uraeus and vulture. Plate LXXV in

Later periods (nineteenth dynasty through to the Third Intermediate Period) yield comparatively fewer examples of rosettes. One of the most significant is the clump growing on a small hill depicted in the tomb of Ramesses III (twentieth dynasty), the only other known instance of a rosette in a natural setting after those from the eighteenth dynasty (figure 24).[42] Rosettes also appear in funerary contexts during this period. The inner coffin of Khonsu from the reign of Ramesses II (nineteenth dynasty) found at Thebes in the Tomb of Sennedjem (TT 1) has rosettes painted in one of the bands of decoration surrounding the upper body directly underneath the crossed arms (figure 25).[43] There are also several examples of funerary rosettes from the Third Intermediate Period (twenty-first dynasty). A cartonnage of an unknown woman found in the Fayum Entrance Area, Meidum (Maidum) has rosettes tucked into the many rows of designs wrapping around the upper part of the woman's body (figure 26).[44] The inner coffin of Anresenmes, the Singer of Amun, found at Thebes, Deir el-Bahri, Priests' cemetery (Pit 219) has rosettes in three locations: her earrings, bands across her wig lappets, and on two semicircles under the wig lappets that could be breasts (figure 27).[45] Rosettes are also found in offering

Carter, Howard. *The tomb of Tutankhamun. Volume 2, The burial chamber: discovered by the late Earl of Carnarvon and Howard Carter*. Ebooks Corporation, 2014. Also number 256 in Carter Catalog, Cairo Museum. Figure 21, Heart Scarab pectoral. Cairo Museum. Plate XIXb in Carter, Howard. *The tomb of Tutankhamun, Volume 3, the annexe and treasury: discovered by the late Earl of Carnarvon and Howard Carter*. E-Books Corporation, 2014. Also Number 267D in Carter Catalog. Figure 22, Metal marguerite from the linen shroud over Tutankhamun's second shrine. Cairo Museum. Pages 23 and 164 in Carter, Howard. The tomb of Tutankhamun. Volume 2, *The burial chamber: discovered by the late Earl of Carnarvon and Howard Carter*. Ebooks Corporation, 2014. Figure 23, Painted casket. Cairo Museum. Plates L1-LIV in Carter, Howard and A.C. Mace. *The tomb of Tutankhamun, Volume 1, Search, discovery and clearance of the antechamber: discovered by the late Earl of Carnarvon and Howard Carter.* Ebooks Corporation, 2014.

[42] Kantor, "Plant Ornament: Its Development in the Ancient Near East." Figure IV. 96, 158. Figure 24, Figure IV 96 in H. J. Kantor. "Plant Ornament: Its Development in the Ancient Near East." Oriental Institute, University of Chicago, 1945.

[43] Figure 25, Metropolitan Museum of Art, number 86.1.2a, b.

[44] Figure 26, Metropolitan Museum of Art, number 06.1232.1.

[45] Figure 27, Metropolitan Museum of Art, number 26.3.4a, b.

contexts such as a model tambourine made of blue faience intended to be an offering to Bastet (figure 28).[46]

The basic criterion for an image to be classified as a rosette, laid down by previous scholarship and endorsed by Kantor, is radial symmetry. All the radiating elements (petals) share the same central point.[47] However, one of Kantor's categories of rosette does not fit into this definition and thus indicates that it is not fully adequate. The most abstract type of rosette included in her analysis is what she terms "broad banded concentric" rosettes, examples of which are found in the tombs of Mentiywey and Intef as well as in the Botanical Garden reliefs made during the reign of Thutmose III (figures 9, 11, and 12).[48] The dominating features of these rosettes are the wide concentric circles that sit atop narrow stems. In the tomb of Mentiywey there no petals at all with the rosette represented simply as two circles. Kantor treats these rosettes as one of many different variations under the umbrella of radially symmetrical rosettes, but "concentric rosettes" do not have to contain petals and thus often have no radiating elements.[49] The only feature that links these rosettes with others is the fact that they are all essentially composed of two rings nestled inside each other. Thus concentric circles, not radial symmetry, are the basic building block of all rosettes. Once all detail is removed, only the circular delineation of the different segments (center and petals) remains.

[46] Figure 28, Model tambourine with rosette border, Bastet on one side, her boat with naos on the other. Third Intermediate Period. Metropolitan Museum of Art number 17.194.2399.
[47] "Radial, Adj. and N.," *Oxford English Dictionary* (Oxford University Press, 2014). Kantor, "Plant Ornament: Its Development in the Ancient Near East." 127. M. Meuer, *Vergleichende Formenlehre Des Ornaments Und Der Pflanze*, 1909. 202.
[48] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 145. Beaux, *Le Cabinet de Curiosités de Thoutmosis III: Plantes et Animaux Du "Jardin Botanique" de Karnak*. 108-109.
[49] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 145-149.

This basic form has a clear link with the morphology of *Compositae* flowers. Despite the enormous diversity of the *Compositae* family, there is a basic characteristic that all members share. Since study of the family began in 1792 the main visual distinction made between its members and other plants has been the composition of their inflorescences.[50] These are a combination of two separate flowers, a structure called a *capitulum*.[51] The two types of inflorescences are called ray florets (what appears to be the petals) and disc florets (what appears to be the center). While the ancient Egyptians would not have been thinking in these specific terms, they certainly would have observed that there was a group of plants whose flowers were composed of two different elements that appeared to the eye to be concentric circles when they are fully open. [52] Not all *Compositae* flowers have the radial petals of the daisies and sunflowers that are the most common plants identified with the family today but still have the basic silhouette of a double circle to a close observer of nature.[53]

A special type of rosette developed during the Middle Kingdom that would rise in popularity through the New Kingdom, called the *Nymphaea* rosette by Kantor. One of the first examples of a *Nymphaea* rosette is located on a model boat bow or stern found at Meir, most likely from the ninth to eleventh dynasties (figure 29).[54] New Kingdom examples contain much more detail than those from the Middle Kingdom and appear to have been especially popular in

[50] J. Mauricio Bonifacino et al., "A History of Research in Compositae: Early Beginnings to the Reading Meeting (1975)," in *Systematics, Evolution and Biogreography of Compositae*, ed. Vicki A. Funk et al. (Vienna: International Association for Plant Taxonomy, 2009). 4.
[51] Vicki A. Funk et al., "Classification of Compositae," in *Systematics, Evolution and Biogreography of Compositae*, ed. Vicki A. Funk et al. (Vienna: International Association for Plant Taxonomy, 2009). 171, 173.
[52] The difference between disc and ray florets is chiefly described in terms of reproductive functions (whether the florets are self-pollinating, male, female or sterile). Ibid. 173. Bonifacino et al., "A History of Research in Compositae: Early Beginnings to the Reading Meeting (1975)." 3-9.
[53] Patrick F. Houlihan and Steven M. Goodman, *The Birds of Ancient Egypt* (Warminster: Aris & Phillips, 1986). 114-115.
[54] Figure 29, *Nymphaea* rosette painted on a boat bow/stern. Meir. Middle Kingdom. Figure IV 24 from H. J. Kantor. "Plant Ornament: Its Development in the Ancient Near East." Oriental Institute, University of Chicago, 1945.

the eighteenth dynasty. The majority appear on bowls made of faience, often placed in a marsh scene surrounded by water lilies in profile, water lily buds, and other marsh plants as a bowl from the joint reign of Hatshepsut and Thutmose III demonstrates (figure 30).[55]

Although the *Nymphaea* group of rosettes technically fits the basic criteria I have outlined for *Compositae* rosettes, I accept Kantor's argument that this group should be distinguished from other rosettes on the basis of petal shape, number of petals, and the other plants often shown with them. She defines a *Nymphaea* rosette as one which has pointed petals, often in multiple layers rather than a single ring, and/or one shown in a marsh setting with more usual representations of water lilies and papyri.[56] Her definition and proposed trajectory of development for these rosettes differs substantially from the earlier ones of Goodyear and Riegel. These earlier authors argued that all rosettes were derived from the open water lily and each had different ways of dealing with the major flaw in this argument, the fact that the majority of rosettes have rounded petals. Goodyear argued that rosettes could be divided into two groups. One group emphasized the pointed petals and the other the stigmatae of the ovary, which when grouped together appear as a circle divided into many small sections with rounded tips by the individual stigma. Riegel argued that the difference in petals was the result of aesthetic change which caused the ends to become more rounded. He placed the most importance on the radial symmetry which he traced back to the water lily.

[55] Figure 30, Marsh bowl. Thebes, Deir el-Bahri, near pit 219, Hathor shrine rubbish heaps. Metropolitan Museum of Art number 22.3.73.
[56] Kantor, "Plant Ornament: Its Development in the Ancient Near East."137-144.

Kantor recognizes that the distinctive pattern and all of the other common elements of *Nymphaea* rosettes cannot explain all the variations of the rosette motif. She argues that these rosettes are composed of a rearrangement of the basic geometry components of the profile representation of the water lily into an open circle rather than a triangle, and not directly from an aerial view of an open flower.[57] Only during the New Kingdom did certain *Nymphaea* rosettes develop that are obviously an imitation of this view. This development trajectory provides an explanation for the problematic placement of the rosettes on many faience bowls. Most bowls contain the rosette on the exterior, painted on the bottom as examples from the tomb of Maherpra (KV36, eighteenth dynasty) and the town of Medinet Gurob (eighteenth dynasty) demonstrate (figure 31a-b).[58] Thus the rosette only appears open when the bowl is picked up and viewed from the bottom. When the bowl is in a normal position resting on a surface only the petals of the rosette can be seen, giving the appearance of the profile position normal for representations of water lilies. It is possible that in these cases the use of the rosette form was a practical solution to representing the water lily on the sides of a bowl so it would appear in its proper profile form.

I believe there is a connection between *Nymphaea* rosettes and *Compositae* rosettes but the problematic nature of the *Nymphaea* category makes it impossible to do more than speculate. *Nymphaea* rosettes have a curious feature which suggests to me that they were not free of the influence of the *Compositae* family. Real water lilies do not have the flat disc shape seen in the center of almost every *Nymphaea* rosette from the Middle and New Kingdom.[59] Water lily petals are layered and become narrower and shorter as they reach the center and change to yellow

[57] Ibid. 137-141.
[58] Figure 31 (A) Faience bowl with Nymphaea rosette. Tomb of Maherpra (KV36). 18th Dynasty, reign of Thutmose IV (New Kingdom). (B) Faience bowl with Nymphaea rosette. Town of Medinet Gurob. 18th Dynasty, reign of Tutankhamun (New Kingdom) Figures IV 31 and 32 in H. J. Kantor. "Plant Ornament: Its Development in the Ancient Near East." Oriental Institute, University of Chicago, 1945.
[59] Kantor, "Plant Ornament: Its Development in the Ancient Near East." Figures IV 29-51 on pages 139 -144.

stamens. The stamens, stigma, and petals give an impression of a star shape; there is no discernible center point (figure 32). Some *Nymphaea* rosettes, especially the few from the Middle Kingdom, have only one circle in the center (figure 29). Many New Kingdom examples of *Nymphaea* rosettes have two or more concentric circles bringing them closer to the *Compositae* rosette design such as the marsh bowl from the joint reign of Hatshepsut and Thutmose III, and one of the bosses from Tutankhamun's chariot (figures 30 and 33).[60] The best evidence that the circular centers of *Nymphaea* rosettes were indeed inspired by *Compositae* plants is found on the sandals of Tutankhamun (figure 34).[61] The center of the pointed petals of the *Nymphaea* rosettes is not a simple circle or even concentric circles but a full-fledged *Compositae* rosette with highly detailed disc florets and wedge shaped ray florets.

The historical difficulty of matching the *Compositae* family to the rosette motif is probably due to a lack of consideration given to the scientific literature that demonstrates the enormous diversity among this group, which would have allowed an endless amount of variations on the same theme by Egyptian artists. *Compositae* (found in the order *Asterale*) is one of the largest families of vascular or flowering plants with more than sixteen hundred genera and approximately twenty four thousand species, ten percent of all known flowering plants.[62] The range of species (as expected) in Egypt is quite wide. A review of the palaeoethnobotanical evidence for *Compositae* in ancient Egypt shows that some species were present in Egypt from Paleolithic times and excavated from ceremonial contexts dating as far back as the Old

[60] Figure 33, Figures IV 36 and 80 in H. J. Kantor. "Plant Ornament: Its Development in the Ancient Near East." Oriental Institute, University of Chicago, 1945.
[61] Figure 34, Page 13 in Hepper, Frank Nigel. Pharaoh's Flowers: Botanical Treasures of Tutankhamun. London: HMSO Publications, 1990.
[62] Funk et al., "Classification of Compositae." 171

Kingdom.[63] The excavation of several different contexts shows a wide variety of uses: food, dye materials, and ceremonial wreaths. The *Students' Flora of Egypt* lists eighty-nine genera of *Compositae* with one hundred and ninety-three different species.[64] Thus the identification of *Compositae* flowers by Borchardt, Keimer and Streng as the source of the rosette design is effectively correct, the only error being the attempt to identify a single species or genus as the source of all the different variations.

A word of explanation is required as to the comparative appropriateness of attempting to match modern scientific systems of classification to those of the Egyptians. The entire family of *Compositae* as it is identified today would not have been recognized as such by the Egyptians because some of the identifying markers which bring so wide a group of plants together are scarcely visible and many are based on molecular data.[65] Egyptian methods of classification were similar to those of the early eighteenth century European scientists who first described the family (Jean Ruel, Paul Giseke, and Joseph Pitton de Tournefort) which were based in visual characteristics or habitats.[66] Egyptians likely would not have connected certain *Compositae* species together that deviated too far from the double circle image (some in fact lack one of the two parts of the *capitulum*).[67]

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[63] Diego Rivera Nunez and Concepcion Obon de Castro, "Palaeoethnobotany of Compositae in Europe, North Africa and the Near East," in *Compositae: Proceedings of the International Compositae Conference, Kew, 1994*, ed. D.J.N. Hind, vol. 2, 2 vols. (London: Whitstable Litho Printers Ltd, 1996), 517–45. 523-4.
[64] Vivi Täckholm and Mohammed Drar, *Students' Flora of Egypt.* (Cairo: Anglo-Egyptian Bookshop, 1965). 34-90.
[65] Funk et al., "Classification of Compositae." 17172-188.
[66] Bonifacino et al., "A History of Research in Compositae: Early Beginnings to the Reading Meeting (1975)." 1-9. See examples of the extremely intricate representations of birds, especially *Ceryle rudis* Houlihan and Goodman, *The Birds of Ancient Egypt*. 114-115. Also the murals of the Amarna palace buildings in F. J. Weatherhead, *Amarna Palace Paintings*, ed. Alan B. Lloyd (London: Egypt Exploration Society, 2007). The abnormalities depicted in the botanical garden of Thutmose III are based on visual characteristics. In Beaux, *Le Cabinet de Curiosités de Thoutmosis III: Plantes et Animaux Du "Jardin Botanique" de Karnak*. 63-64.
[67] Funk et al., "Classification of Compositae." 173.

Three aspects of *Compositae* rosettes have been cited as proof that they are not related to real plants. The most important is the emphasis and elaboration on abstract geometric shapes. In an attempt to explain the few geometrically abstract examples presented as plants with leaves and stems such as those in the tomb of Mentiywey, Kantor makes the rather confusing statement that such rosettes presented in natural contexts with stems and leaves were not actual plants but a creation of the Egyptians who used geometric forms to imitate actual plant forms.[68] However, silhouettes and geometric forms are the basis for *all* plant images in Egyptian art.[69] Lise Manniche stresses that ideas of plants, not their details, formed the basis of their representations.[70]

One of the best examples of the role of geometry in the construction of plant representations is the blue water lily, one of the most widespread and important plants in Egyptian art.[71] The blue water lily is shown as a large triangle composed of three small triangular sections (these represent sepals) which alternate with much narrower sections (the petals, see water lilies in figures 19, 21, 25, and 27).[72] There is often an ovular shape at the base of the large triangle and it is usually shown attached to a thick stem (figures 35 and 36).[73] This image appears on a variety of objects: blue faience tiles, seals, bowls, cups, wall inlays, and terminals of broad collars. Although recognized as being naturalistic, the construction of the image is based on

[68] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 128.
[69] Manniche, *An Ancient Egyptian Herbal*. 7.
[70] Ibid. 160.
[71] S Sydney H. Aufrère, "Flore Pharaonique et Croyances Égyptiennes," *Bulletin de La Société d'Égyptologie de Genève* 22 (1998): 5–16. 10.
[72] Goodyear, *Grammer of the Lotus*. 25.
[73] Figure 35, Relief of Sit-hedj-hotpe and Sit-kheper-ka, daughters of Djehuti-hotpe. Tomb of Djehuti-hotpe at Deir-el-Bersha. 12th Dynasty, reign of Sesostris III (Middle Kingdom). Painted limestone. H. 27.5 cm. Cairo museum. Plate 18 in Aldred, Cyril. Jewels of the Pharaohs: Egyptian Jewellery of the Dynastic Period. London: Thames and Hudson, 1971. Figure 36, Lotus Flower Inlay. Great Palace at El-Amarna. 18th Dynasty, Amarna Period (New Kingdom). Faience. Metropolitan Museum of Art, number 26.7.967.

simple geometric forms which are far less detailed than the actual plant and suppress many of the subtleties of color variation and arrangement of petals actually found in nature.

I would venture to suggest that the only reason the representations of the blue water lily have been so positively identified and are more standard than rosettes is because the number of plant candidates is much smaller. The family *Nymphaeacea* has fifty species while *Compositae* has approximately twenty four thousand.[74] There were only two species of water lily present in Egypt before the Roman period: *Nymphaea caerulea* (blue water lily) and Nymphaea *lotus* (white water lily).[75] The blue and white water lilies have been present from the very earliest time in Egypt while the pink Persian lotus (*Nelumbo nucifera*) only introduced in the twenty seventh dynasty.[76]

Another difficulty for scholars has been the unnatural arrangements of color and the use of unrealistic colors for the different parts of the *Compositae* rosette in the majority of variations. These variations include rosettes with multicolor petals, concentric rings of color across the petals, and those with color combinations of red, blue and green in both centers and petals. Egyptians often played with reality in representations of animals, especially with those that were highly symbolic, in an identical manner. Blue, red, green, and gold (either in color or material) were all highly symbolic colors which were substituted for natural colors in, for instance, birds such as falcons and vultures.[77] These substitutions often maintained the distinctions between different sections of an animal made by their natural coloring, which is the case in many

[74] D. J. Counsell, "Blue Lotus: Ancient Egyptian Narcotic and Aphrodisiac?," in *Pharmacy and Medicine in Ancient Egypt: Proceedings of the Conferences Held in Cairo (2007) and Manchester (2008)*, ed. Jenefer Cockitt and Rosalie David, BAR International Series 2141 (Oxford: Archaeopress, 2010), 51–55.
[75] Ibid. 51.
[76] Aufrère, "Flore Pharaonique et Croyances Égyptiennes." 10.
[77] Houlihan and Goodman, *The Birds of Ancient Egypt*. 39-42, 46-49.

Compositae rosette variations. In cases where there is unusual color patterning in addition to substitution, it is possible to identify a connection with features of species of *Compositae*. These features could have been modified or combined together by the artist. This treatment is comparable to the way features of different species of vulture and falcons were combined to create representations of different deities such as Nekhbet and Horus.[78]

Most *Compositae* species have disc and ray florets in different colors. The most common color associated with the disk florets is yellow (the color of the centers in daisies and chamomile flowers) although a very wide range of colors are in fact found in nature. Petals can be almost any color, but white is the color usually associated with them. However, in almost every case the disk florets are a different color or shade from the ray florets. The rosettes in Akhenaton's tiles and some of the pendants from the Malqata palace have the white petals and yellow centers typical of daisies (figures 14, 17, 18). One of the types of rosettes found on the cartonnage from the Third Intermediate Period between the wig lappets also has a yellow center with white petals (figure 26). This color scheme is deemed to be the most naturalistic because it is easily identified with actual plant species. Second place goes to *Compositae* rosettes which have blue or red petals/ outer circles with gold centers. The rosettes found on the wire diadem of the Princess Khnumet and the diadem of Tutankhamun both have red carnelian outer circles and gold centers (figures 2 and 20). The eight hundred and fifty rosettes in a hood or covering for the wig found in the tomb of the Three Foreign Wives have either carnelian or turquoise petals with small gold centers (figure 7).[79] Tutankhamun's pectorals have rosettes with dark blue lapis lazuli petals and gold centers (figure 19 and 21). The border of rosettes along one of his chests has the same blue

[78] Ibid. 40-43, 46-49.
[79] Ibid.

and gold combination rendered in paint (figure 23). Because the yellow center is maintained, and the petal colors are occasionally found in nature, this color scheme is also considered naturalistic.

The differentiation between the center and the outer circle is maintained even when the colors move beyond what a viewer would perceive as "natural." Several variations forgo the yellow center and use red or blue instead and a range of colors for the outer ring/petals. The rosettes on Princess Khnumet's openwork diadem have a complex arrangement with large red carnelian centers and alternating light blue turquoise and dark blue lapis lazuli petals (figure 3). The rosette wall decoration from the Malqata Palace has a similar color scheme with a red center and blue petals (figure 13). One of the two types of rosette in the bucrania ceiling section from the palace has a large blue center with a red dot at the heart surrounded by white petals (figure 15). Two of the variations included in the set of rosette pendants found at the Malqata palace have centers of different shades of blue paired with either a much lighter or much darker shade of blue petals. The rosettes on the diadem of Nofret have a dark blue or black center with eight petals in either red or light green (figure 1).[80]

Artists relied on this principle when they created vulture plumage patterns. One of the most common species of vulture used in Egyptian art was the Griffon vulture (*Gyps fulvus*). The distinctive features of the Griffon vulture are the proportions of the long dark primary feathers and the shorter white wing feathers.[81] In a wall painting of the Goddess Nekhbet from the mortuary temple of Pharaoh Hatshepsut, the stark contrast between the light colored wing feather (painted in light blue) and the darker flight feathers (painted in red) has been maintained by the artist while substituting the red and blue shades that represented the sky at various points of the

[80] Aldred, *Jewels of the Pharaohs: Egyptian Jewellery of the Dynastic Period*. 33.
[81] Houlihan and Goodman, *The Birds of Ancient Egypt*. 40-43.

day (figure 37).[82] Another example is the pectoral of Queen Mereret which has the vulture Nekhbet flying over the cartouche of Sesostris III (figure 38).[83] The long flight feathers are red and contrasted with the blue covert feathers. Although the shade of blue is darker than the one used in the wall painting, the contrast is still clear.

Representations of birds also demonstrate another design principle the Egyptians had for representations of the natural world. They would often either combine the features of two different species together or add details that were never found in nature. In many representations of the goddesses Nekhbet and Nut, features of the Griffon vulture were combined with those of other species of vulture such as the Lappet-faced vulture (*Aegypius tracheliotus*). The Lappet-faced vulture has a large, dark hooked upper beak and flaps of skin which hang from the neck and the side of the head.[84] An example of this vulture is the image of the goddess Nut on the inner coffin of Yuia (Tomb 46, Valley of the Kings, eighteenth dynasty) (figure 39).[85] The head has flaps of skin hanging down near the beak, which has the required hook. The neck also shows a simplified form of the skin wrinkles. These head features were often combined with the body and the wings of the Griffon vulture as seen in a vulture pectoral from the Tomb of the Three Foreign Wives of Thutmose III (figure 40).[86]

The "Horus Falcon" is perhaps the best example of a composite representation that still maintains ties to the natural world. Houlihan and Goodman use this title to refer to a specific

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[82] Ibid. 40-41. Figure 37, The Goddess Nekhbet, Temple of Hatshepsut reproduced by Charles K. Wilkinson. Metropolitan Museum of Art number 30.4.138.
[83] Figure 38, 12th Dynasty, reign of Sesostris III (Middle Kingdom). Cairo Museum. Number 29 in Aldred, Cyril. *Jewels of the Pharaohs: Egyptian Jewellery of the Dynastic Period*. London: Thames and Hudson, 1971.
[84] Houlihan and Goodman, *The Birds of Ancient Egypt*.
[85] Figure 39, Figure 58 in Houlihan, Patrick F., and Steven M. Goodman. *The Birds of Ancient Egypt*. Warminster: Aris & Phillips, 1986.
[86] Houlihan and Goodman, *The Birds of Ancient Egypt*. 41-42. Figure 40, Metropolitan Museum of Art number 26.8.105.

icon of a falcon in Egyptian art which highlights its association with the god Horus.[87] The reason the title is used rather than the name of a specific species is because it is in fact impossible to assign just one as the icon's source.[88] There are four species of falcon that the authors cite as having some of the features of the image: the Eleonora's falcon (*F. eleonorae*), the Hobby (*F. subbuteo*), the Lanner (*F. biarmicus*), and the Peregrine (*F. peregrines*). All have the dark curved line under the eye that moves around the jaw and along the neck which is the most distinctive feature of the Horus falcon.[89] There are also certain standard characteristics found on the Horus falcon that are completely imaginary such as the black and green checkered tail and some of the black trimmings on the feathers (figure 41).[90]

Several variations of *Compositae* rosettes have unusual color arrangements in either the outer circle/ray florets or the inner circle/disc florets. The diadem from the tomb of the Three Foreign Wives contains six rosettes, two on the vertical band and two on either side of the gazelle heads on the horizontal band (figure 8). The petals and the one surviving center are constructed of inlays of various types of glass and carnelian set in gold.[91] Each rosette has petals of different colors with blue and red the only colors to survive intact. The inner coffin of Anresenmes, the Singer of Amun, has similar rosettes with multicolored petals on her ears as earrings and on the semi circles underneath her wig lappets (figure 27). The coffin of Khonsu has the same rosettes alternating with water lilies in the outermost ring of the painted floral collar (figure 25). These multicolored petals are the result of artistic license because no actual

[87] I have adopted Hartwig's term icon here to refer to the Horus falcon image because it is a stock image which had a consistent meaning. See Melinda Hartwig, *Tomb Painting and Identity in Ancient Thebes, 1419-1372 BCE* (Brussels: Fondation Égyptologique Reine Élisabeth, 2004). 53-54.
[88] Houlihan and Goodman, *The Birds of Ancient Egypt*. 46.
[89] Ibid.
[90] Ibid. 48. Figure 41, Tomb of Ramesses IX (KV 6). 20th Dynasty. Figure 61 in Houlihan, Patrick F., and Steven M. Goodman. *The Birds of Ancient Egypt*. Warminster: Aris & Phillips, 1986.
[91] Aldred, *Jewels of the Pharaohs: Egyptian Jewellery of the Dynastic Period*. Figure 49 and page 120.

Compositae inflorescences have ray florets in different colors on the same plant. However there are some species that have ray florets with mottled coloring or different colors on each side of the floret which could have served as inspiration.[92]

Two other examples from Amenhotep III's reign also have unusual designs. The rosette medallion from the Tomb of Merytre-Hatshepsut/Sennefer (KV 42) has sixteen petals with concentric bands of color crossing them (figure 16). The innermost ring is light blue faience, followed by a thin ring of red jasper with the tips ending in dark blue glass. The second of the two types of rosettes in the ceiling fragment from the Malqata palace is similar with a three part color division (figure 15). It is placed between the horns of a bovine, either the goddess Hathor or a simple bull in the place of the typical sun disk. The white petals have bands of coloring with either a red or blue ring forming their edges. The center consists of circle with a very small diameter in black or dark blue. The radial lines of the petals do not reach all the way to the center leaving a ring of undifferentiated white around the dark center.

The second type of rosette on the cartonnage from Fayum is very similar to those on the Malqata ceiling. The rosettes have a blue center with triangular white petals tipped with blue. They are placed in three areas; two more or less continuous rows at the woman's shoulder and the edge of the wig and a row that runs from the edge of the cartonnage to the edge of the right breast. These *Compositae* rosettes could have been inspired by species that have a ring of a dark

[92] Example species are *Arctotis acaulis* or *Gazania xrigens*. While this species is native to southern Africa, variations may have existed in Egypt or other neighboring countries as the plants tolerate a wide range of habitats and cultivate well. Ola Karis et al., "Arctotideae," in *Systematics, Evolution and Biogreography of Compositae*, ed. Vicki A. Funk et al. (Vienna: International Association for Plant Taxonomy, 2009), 385–408. 389, 400-401.

color at the end of the ray florets closest to the disc florets but also by inflorescences whose disk florets change in color or lighten as they open creating an impression of rings.[93]

This proliferation of modifications to colors and color patterns as well as the emphasis on geometry does not however mean that Egyptians had no interest in representing the more intricate natural details of *Compositae* plants; like with animals, they were fully capable of providing them when desired. The rosettes in faience tiles from Akhenaton's Great Palace at Amarna are rendered in incredible detail in the same manner as other images of animals found in the palace complex.[94] Several very similar tiles exist, but the example residing in the Royal Museum in Brussels is the best preserved (figure 17). The rosettes were made as separate inlays placed into the tile and then surrounded by painted details.[95] Their light yellow centers show the small indentations of individual disc florets and are surrounded by white petals. The centers have a wide diameter and bulge above the surface of the inlay considerably. The petals show an incredible amount of detail in that they are not simply oblong or triangular but wedge shaped with flat top edges.

The background of the Brussels tile shows the most detailed representation of leaves accompanying a *Compositae* rosette since unlike in the reliefs the color survives. The inflorescences are positioned on thin dark green stems accompanied by wispy dark green leaves containing central ribs and pairs of opposing leaflets that run up the entire length, a leaf type

[93] These species include desert plant *Reichardia tingitana*. Tamer Mahmoud, *Desert Plants of Egypt's Wadi El Gemal National Park* (Cairo; New York: American University in Cairo Press, 2010). 114.
[94] Weatherhead, *Amarna Palace Paintings*. Color plate 8, 143, 162-163. Kantor, "Plant Ornament: Its Development in the Ancient Near East." 149.
[95] Hepper, *Pharaoh's Flowers: The Botanical Treasures of Tutankhamun*. 14. C Jeffrey, "Compositae: Introduction with Key to Tribes," in *Families and Genera of Vascular Plants, Vol. Viii, Flowering Plants, Eudicots, Asterales*, by W. Kadereit and C. Jeffrey (Berlin: Springer-Verlag, 2007), 61–87.76.

called a pinnate.[96] Because of the level of detail, it is possible to narrow down possible species identifications for these rosettes to three: *Chamaemelum nobilis*, *Matricaria recutita,* or *Anthemis pseudocotula*. All three possess a large hollow center which is much larger and has a bigger dome than that of other comparable *Compositae* flowers such as daisies (compare figure 42 and 43).[97] Their petals are shorter in proportion to the center and there tend to be fewer of them. The inflorescences in the Amarna tiles display these same characteristics.

A fragment from the West wall of the Green room in the North palace shows a bird as part of an extended scene of a papyrus marsh (figure 44).[98] The bird swoops down from the top right hand corner and is rendered in minute detail. Due to this accuracy, the bird has been given an identity, *Ceryle rudis* or a pied kingfisher. Every feather is meticulously painted in the bold shading and color contrasts characteristic of the bird and given its correct shape.[99] The head is not a generic bird head but has a very distinctive dark narrow bill with a long upper beak and a short lower beak, as well as a detailed crest on the back of the neck.[100] The posture and positioning of the bird in the scene confirms its identity as a pied kingfisher, since it is shown in the diving position this bird uses while hunting.[101]

Both abstract and naturalistic *Compositae* rosettes often appear in the same archaeological contexts and on the same types of objects. The two different variations of rosette beads found in the mortuary temple of Hatshepsut have very different compositions (figures 5

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[96] Hepper, *Pharoh's Flowers : Botanical Treasures of Tutankhamun*.
[97] Omphal Singh et al., "Chamomile (*Matricaria chamomilla* L.): An Overview.," *Pharmocognosy Review* 9 (2011): 82–95. 83-84.
[98]Figure 44, Weatherhead, *Amarna Palace Paintings*. Color plate 8, 143, 162-163.
[99] Houlihan and Goodman, *The Birds of Ancient Egypt*.114.
[100] Ibid. 114-115.
[101] Linda Evans, *Animal Behaviour in Egyptian Art : Representations of the Natural World in Memphite Tomb Scenes* (Oxford, England: Aris and Phillips, 2010). 49.

and 6). Both are a solid color made of light blue faience but vary in their composition quite dramatically. The first, a simple disk divided into triangular slices with a focal point in the center like a wheel with spokes, was found in the Hathor Chapel. This is a stark contrast to the other set of beads found at the temple consisting of a circle of incised petals with a domed center. They have eight petals with detailed incisions which match the types of creases found in many *Compositae* ray florets. The two diadems from the tomb of Princess Khnumet are another example.[102] Interspersed through the wire diadem are large units of four papyrus heads placed around a central rosette composed of simple concentric circles (figure 2). They are abstract in form but naturalistic in coloring since the outer rims are red (probably carnelian) and the centers gold.[103] The second diadem is composed of eight pieces of open-worked gold, each containing two representations in cloisonné technique of a twelve petal rosette (figure 3). The narrow petals of lapis lazuli and turquoise inlay create a subtle shifting from dark to light blue.[104] The central disk made of carnelian surrounded by a thin ring of gold appears to rise slightly from the flat surface of the diadem. While the rosettes' color scheme is unusual, their form is extremely naturalistic; the ratio of size between the center and the petals suggests that these rosettes may have been inspired by a species of *Anthemis, Chamaemelum* or *Matricaria* since all of these genera have very narrow petals with a large domed center.[105]

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[102] Aldred, *Jewels of the Pharaohs: Egyptian Jewellery of the Dynastic Period*. 102-103.
[103] Ibid. 102. There has been some debate over whether the elements connected with wire should be considered stars or rosettes, but as they are identical to the motif and hieroglyph (N14) that represent the concept of a star, I will differ from Kantor and place them in that category rather than classifying them as a rosette. Her assumption that since diadems usually have vegetal ornamentation it must be a rosette is also contradictory since she herself exempted star shaped designs from consideration as rosettes under the premise that its natural origin is clear and that it is also the form of the hieroglyph for star. Kantor, "Plant Ornament: Its Development in the Ancient Near East." See footnote 1 on page 127, 134. Sir Alan Gardiner, *Egyptian Grammer: Being an Introduction to the Study of Hieroglyphs*, 3rd ed. (Oxford, England: Oxford University Press, 1982). 487.
[104] Aldred, *Jewels of the Pharaohs: Egyptian Jewellery of the Dynastic Period*. 103.
[105] Täckholm and Mohammed Drar, *Students' Flora of Egypt.* 67-71. This diadem one of the examples which Kantor considers to have a *Compositae* origin. Kantor, "Plant Ornament: Its Development in the Ancient Near East." 135.

The best examples of the coexistence between the abstract and the naturalistic are the variations of rosettes found on objects from the tomb of Tutankhamun. His diadem contains a series of rosettes composed of red carnelian inlays with gold centers to either side of the uraeus and vulture pair (figure 20). His heart scarab pectoral has two rosettes located in the bottom row alternating with blue water lily flowers and buds (figure 21). They are identical to those on the diadem with lapis rather than carnelian inlay.[106] In contrast, his lunar pectoral has very naturalistic rosettes on either side of the base of the central water lily ornament at the back of the necklace; the base of the water lily is attached to the body of the necklace rather than the inflorescence (figure 19). They have fourteen petals which appear to have been inlaid individually with rounded tips that taper to a narrow point near the gold center. These rosettes curve outward towards the viewer with a convex surface. Those on Tutankhamun's painted chest are the same rosette variation in painted form (figure 23).

This range of variations gives *Compositae* rosettes a place within nature as the Egyptians perceived it, full of references to the deities and the cosmological order. Representations of plants, animals, and various natural environments including marshes and deserts were not merely observations but symbols for various deities and wider concepts such as the balance between order and chaos and the solar cycle. *Compositae* rosettes were no exception; the few authors who have remarked on their significance linked it to various aspects of the cosmological order of the world. Streng argued for an astral significance on the basis of the predominance of the color red with white borders and the large number of eight ray/petal forms. He also made a connection between the rosettes and the cult of the dead through the similarity of some examples to the species *Chrysanthemum coronarium* L. and C. *leucanthemum* L. found in wreaths and bouquets.

[106] Aldred, *Jewels of the Pharaohs: Egyptian Jewellery of the Dynastic Period*. Figure 68, page 122.

The idea that rosettes may refer to ideas of kingship is put forward indirectly by Schneider and is also mentioned by Kantor in her section on Predynastic examples. All of their theories were vague, perhaps due to the issue of the diversity of forms. Through a comparison with representations of the blue water lily, I will argue that several features of these rosettes indicate that they were a representation of the god Re in his form of the sun disk and were used by a range of people within Egyptian society.

The blue water lily was one of the most important plants to the Egyptians who believed it was the birthplace of Re in the form of the sun disk.[107] It was the symbol of rebirth and of the generative side of the world's chaotic forces. *Compositae* rosettes often appear with water lilies and the ways the latter's physical features and contexts represent the flower's significance provide an excellent point of comparison. Blue water lilies gained their significance as a solar symbol in part because of their color and blossoming patterns. The natural occurrence of the solar colors blue and yellow made the flower an obvious choice for a symbol of the sun as were its flowering habits, the inflorescence opening and closing with the rising and setting of the sun. In art, the inflorescence is structured to emphasize the plant's solar connection as well as the connotations of birth and the beginning of the day. It is always shown in profile whether as a part of a landscape or alone. The center is hidden by the petals, which gives it the shape of a triangle in its most abstract form. Rather than the natural range of pale blue and purple colors, the petals are always shown as light blue.[108] The petals are closer together than in the fully opened position and the sepals are always shown in the front cupping the petals as they do when the inflorescence

[107] Lise Manniche, "Reflections on the Banquet Scene," in *La Peinture Égyptienne Ancienne: Un Monde Des Signes À Préserver*, ed. Roland Tefnin (Bruxelles: Fondation Égyptologique Reine Élisabeth, 1997), 29–36. 30. Gay Robins, "Birds, Blooms and Butterflies: Representing the 'Natural World' in New Kingdom Egyptian Art," n.d. 10-11. OEAE entry on flowers and the lotus.

[108] Perry D. Slocum, Peter Robinson, and Frances Perry, *Water Gardening : Water Lilies and Lotuses* (Portland, Or: Timber Press, 1996). 171.

is between the bud stage and the full blossom stage (figure 45). Thus the profile shown is not that of a fully opened flower but one that is in the process of opening.

The blue water lily does not owe all of its significance to its morphological features. Its natural habitat, papyrus marshes, heightened its importance as a symbol of creation and renewal.[109] Egyptian cosmology was inspired by the dynamics of the natural world of the Nile Valley which Egyptians believed was a representation of the wider universe and the guide to its inner workings.[110] The central dynamic of the valley was the yearly flood which temporarily transformed the Egyptian landscape into a mess of water. Dark soil brought by the floods, migrating fish and birds, and the different plants which sprung up created a scene of chaos.[111] This chaos was contrasted with the carefully cultivated areas of crops and gardens which were tamed and controlled by human beings. However, the Egyptians recognized that the chaotic force of the flood waters was necessary for the renewal and continuation of life in the valley.[112] The dark soil brought by the waters was rich in nutrients and renewed the fields. The newly arrived fish, birds, and plants were essential resources for food and other supplies. Thus the wildness of the marshes was a place not just of chaos but of life.

In contrast to the blue water lily, *Compositae* rosettes are rarely represented as growing plants and the natural habitats of most *Compositae* species are outside the most cosmologically important environments to the Egyptians.[113] The wild and uncultivated habit of species such as

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[109] W. Harper Benson, "Lotus," *Oxford Encyclopedia of Ancient Egypt*, Oxford Digital Reference Shelf (Oxford: Oxford University Press, 2005).
[110] Robins, "Birds, Blooms and Butterflies: Representing the 'Natural World' in New Kingdom Egyptian Art." 1. Manniche, "Reflections on the Banquet Scene." 29. Sydney Aufrère, "Le Cosmos, Le Minéral, Le Végétal et Le Divin," *Cercle Lyonnais d'Égyptologie Victor Loret* Bulletin 7 (1993): 7–24. 7.
[111] Robins, "Birds, Blooms and Butterflies: Representing the 'Natural World' in New Kingdom Egyptian Art." 5-6. Robins, *The Art of Ancient Egypt*. 14.
[112] Robins, "Birds, Blooms and Butterflies: Representing the 'Natural World' in New Kingdom Egyptian Art." 1-2.
[113] Ibid. 6, 13-15.

Chamaemelum nobilis or *Matricaria recutita* (two of the probable species found in the Amarna tiles and the diadem of Princess Khnumet) is evident in accounts from the Greeks, who describe it as being found as near walking paths or places with poor soil.[114] There are no depictions of *Compositae* rosettes growing in Egyptian gardens so it is reasonable to conclude that they were not a cultivated plant and thus not a representation of human control over nature. Lise Manniche has speculated that variations of chamomile may have been cultivated around the time of Ramses II based on tissue samples taken from Ramesses II but admits that the pollen evidence could also point to field plants near the mummification site whose airborne pollen floated into the oils and resins.[115]

There are four known instances of *Compositae* rosettes as plants growing in a landscape. The most well-known are the two depicted in raised relief in the Botanical Garden of Thutmose III. The rosette identified as *Bellis sylvestris* Cyrillo (number E58 in Beaux's line drawing) and the plant numbered E59 are located on the lower of the two registers on the wall designated by Beaux as E31 (figures 46 and 47).[116] This wall contains plants that Beaux argues were observed and possibly brought back to Egypt as specimens during military campaigns in Palestine and Syria.[117] The landscape is generic, a sort of trophy garden (hence the name given to the series of reliefs) and not the plants' natural habitats. The tomb of Ramses III contains a row of *Compositae* rosettes growing across a small hill, but also lacks a more detailed context (figure

[114] Jeanne D'Andrea, *Ancient Herbs in the J. Paul Getty Museum Gardens* (Malibu, CA: J. Paul Getty Museum, 1989). 40-41.
[115] Manniche, *An Ancient Egyptian Herbal*. 17-20.
[116] Figure 46, Plate VIII in Beaux, Nathalie. Le cabinet de curiosités de Thoutmosis III: plantes et animaux du "Jardin botanique" de Karnak. Louvain: Peeters Press and Department Orientalistiek, 1990. Figure 47, Plate XIII in Beaux, Nathalie. *Le Cabinet de Curiosités de Thoutmosis III: Plantes et Animaux du "Jardin Botanique" de Karnak*. Louvain : Peeters Press and Department Orientalistiek, 1990.
[117] Beaux, *Le Cabinet de Curiosités de Thoutmosis III: Plantes et Animaux Du "Jardin Botanique" de Karnak*. 1,60.

24).[118] Only those from the tombs of Intef and Mentiywey are present in a recognizable and significant natural habitat, the desert. The rosettes in the tomb of Intef are depicted growing in the desert, while those in the tomb of Mentiywey appear in a hunting scene amongst representations of other desert plants (figures 11 and 12).[119] Like the marshes, the desert was a source of chaos but sterile and represented death rather than life.[120] This was a place of danger over which human beings could attempt to assert order at their peril through hunting and capturing desert animals which could not be controlled or domesticated.[121]

The cosmological undertones of desert scenes could indicate that *Compositae* rosettes were seen as a (minor) representation of the sterile side of the sun, which can destroy with its light and heat as well as bring life. However, the scarcity of the desert representations indicates that their inclusion in these two was perhaps the caprice of the artist or the patron rather than an indication of a general association with the chaotic powers of the desert.[122] *Compositae* rosettes were also often used as a border for other wall scenes or areas of decoration on objects. Borders of rosettes surround the battle scenes on Tutankhamun's chest and enclose the figure of Bastet in her boat on a model tambourine made of blue faience (figures 23 and 28). In these two examples the rosettes act as an ordering device, containing the scenes inside. In the case of the battle scene this function is particularly crucial since it depicts the chaotic event of a battle between Egyptians and foreigners with the king striving to restore order by defeating Egypt's enemies. A motif that was associated with chaos, even in a minor way, would not have been chosen to

[118] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 158. This tomb has not been fully published and unfortunately Kantor does not give any more information about the image's location in the tomb or other details of the larger scene.
[119] Ibid. 145.
[120] Robins, "Birds, Blooms and Butterflies: Representing the 'Natural World' in New Kingdom Egyptian Art." 2-5. Robins, *The Art of Ancient Egypt*. 14, 17.
[121] Robins, "Birds, Blooms and Butterflies: Representing the 'Natural World' in New Kingdom Egyptian Art."3-5.
[122] Ibid. 3-4.

contain such a scene. Thus there is no obvious association between *Compositae* rosettes and the power of a specific environment within the larger cosmological scheme.

The most immediate similarity between *Compositae* rosettes and blue water lilies is the use of solar colors. As previously mentioned, all variations of the rosette contain at least one solar color. Red and gold were colors associated with the sun itself while various shades of blue represented the different colors of the sky at dusk and dawn. Gold was a popular material for rosettes in jewelry with some, such as the pall beads from Tutankhamun's linen shroud and the hair ornaments of Senebtisy, made entirely of gold (figures 4 and 22). The popularity of these colors indicates that Egyptians associated this motif with certain aspects of the sky and the sun.

The other important similarity is that their different basic geometric forms reveal a relationship with a very specific aspect of the sun. *Compositae* rosettes are presented from an aerial perspective in contrast to all other inflorescences of plants in every form of Egyptian art.[123] The choice of profile views for plant blossoms is in line with Egyptian methods of perspective since Egyptian artists did not attempt to represent two dimensional art forms as three dimensional. They used a combination of perspectives to show an object in its most recognizable form, called composite perspective.[124] The best example of how composite perspective functioned in plants is in the water lilies painted into marsh pools such as the one in the Tomb of Menna (figure 48).[125] The flowers in this scene are shown in profile as they would look floating on the top of the water from the side, but the leaves look as they would when viewed from above.[126] The reason for this choice was likely that the distinctive shape of the leaves only

[123] Kantor, "Plant Ornament: Its Development in the Ancient Near East." 137-138.
[124] Robins, *The Art of Ancient Egypt*. 21.
[125] Figure 48, Long hall right (LHR), Theban Necropolis. 18th Dynasty (New Kingdom). Figure 2.15, page 78 in Melinda Hartwig, ed., *The Tomb Chapel of Menna* (Cairo: The American University in Cairo Press, 2013).
[126] Gay Robins, *Proportion and Style in Ancient Egyptian Art* (Austin: University of Texas Press, 1994). 3.

appears from this perspective; leaves in profile would just be thin lines while the profile position is the most recognizable view for the flowers.[127]

In aerial perspective, the *Compositae* rosette is almost identical to the hieroglyph *r'* (re), N5 in the Gardiner sign list.[128] This hieroglyph is composed of a very small circle/dot within a larger circle, the same basic geometric composition. The N5 sign is used for a variety of purposes. It is the name of the sun god Re and is usually the first sign in the Throne name of pharaohs.[129] It is also an ideogram (its shape represents its meaning) signifying in this case the sun. Written alone, it represents the sun as a physical object in the sky.[130] N5 was also connected to ideas of time because of the relationship between the sun's movement across the sky and the passage of time.[131] It is used with other signs as a generic determinative, ending a word and indicating the relationship the word has to time.[132]

The similarity in form of *Compositae* rosettes and the N5 glyph is the most conclusive evidence that they were a floral incarnation of the body of the sun and its power. Many images of nature in Egyptian art are visual puns in which seemingly mundane objects have several layers of symbolic meaning beyond their literal meanings.[133] The water lily is used as a symbol for the inundation and its accompanying changes in the environment. The hieroglyph *akh't*, the word for the season of the inundation, is a pool with water lilies.[134] The image of the pintailed duck, which

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[127] Ibid. 3-4.
[128] Gardiner, *Egyptian Grammer: Being an Introduction to the Study of Hieroglyphs*. 485.
[129] James P. Allen, *Middle Egyptian: An Introduction to the Language and Culture of Hieroglyphs* (Cambridge: Cambridge University Press, 2005). 64-65.
[130] Gardiner, *Egyptian Grammer: Being an Introduction to the Study of Hieroglyphs*. 34.
[131] Ibid. 30.
[132] Ibid. 31. Allen, *Middle Egyptian: An Introduction to the Language and Culture of Hieroglyphs*. 3.
[133] Gay Robins, "Problems in Interpreting Egyptian Art," *Discussions in Egyptology* 17 (1990): 45–58. See pages 51-54.
[134] Robins, "Birds, Blooms and Butterflies: Representing the 'Natural World' in New Kingdom Egyptian Art." 8. Gardiner, *Egyptian Grammer: Being an Introduction to the Study of Hieroglyphs*. 480 (sign M8).

migrates to Egypt at the time of the inundation, is used in the hieroglyph "to fly" but also in the one for "primordial time."[135] The most abstract *Compositae* rosettes, the closest to the N5 hieroglyph, occur in three out of the four instances of a rosette in a natural setting and thus indicate that the basic geometric shape is the link between actual flowers and the sun.

Compositae rosettes appear in contexts where a reference to the god Re would make sense given the other symbols present or the type of object. The relationship between the ruler and the god would make it reasonable for rosettes to appear on many objects associated with the king as is the case in the tomb of Tutankhamun.[136] *Compositae* rosettes are placed alongside other significant plants and animals, many linked with important deities, in three of his important jewelry pieces: the uraeus/vulture diadem, his necklace with the lunar pectoral, and his heart scarab pectoral (figures 19-21). Rosettes are the principle ornaments on the horizontal band of the diadem to which is attached representations of the goddesses Isis and Nephthys in their cobra and vulture forms.[137] They are found in the bottom row of the heart scarab pectoral placed between persea fruits and water lilies. Scarabs were intimately linked with the sun. The large winged scarab is a representation not only of rebirth generally but the birth of Re who was born as a scarab in the first morning of the world.[138] The diurnal passage of the sun across the sky was symbolized by the food balls of scarabs, dung balls created as a food source and rolled along by them across the desert until they could be stored for later use.[139] The lunar pectoral shows the sun

[135] Robins, "Birds, Blooms and Butterflies: Representing the 'Natural World' in New Kingdom Egyptian Art." 7-8.
[136] Maya Müller, "Re and Re-Horakhty," *Oxford Encyclopedia of Ancient Egypt*, Oxford Digital Reference Shelf (Oxford University Press, 2005).
[137] Katja Goebs, "Crowns," *Oxford Encyclopedia of Ancient Egypt*, Oxford Digital Reference Shelf (Oxford University Press, 2005).
[138] Carol Andrews, "Amulets," *Oxford Encyclopedia of Ancient Egypt*, Oxford Digital Reference Shelf (Oxford University Press, 2005). Robert Steven Bianchi, "Scarabs," *Oxford Encyclopedia of Ancient Egypt*, Oxford Digital Reference Shelf (Oxford University Press, 2005). Müller, "Re and Re-Horakhty."
[139] Bianchi, "Scarabs."

in its bark moving through the underworld supported by a series of blue water lilies on high stalks.[140] The *Compositae* rosettes are found at the other end of the necklace, placed like two eyes at the base of a large blue water lily flower. They could be a reference to the passage of time since the necklace features the sun on its nightly voyage.

Three other objects from royal and elite contexts also combine *Compositae* rosettes with symbols of deities. They demonstrate that unlike other symbols of Re's power such as the sun disk, rosettes could be used by other people besides the king. The rosettes on Princess Khnumet's openwork diadem are identical to those on King Tutankhamun's, surrounded by four papyrus heads, symbols of fertility and life (figure 2).[141] Her second diadem contains a flying vulture made out of sheet gold with obsidian eyes and feathers detailed in chasing, which soars over the front section (figure 3). The diadem also once contained a tall tree worked in gold with a central tube and attached golden leaves as well as fruits, possibly representations of dates, attached on silver rods.[142] If the tree is indeed a representation of a date palm, it was also a symbol of the god Re, while the vulture could represent a number of different goddesses.[143] A final example is the model tambourine depicting Bastet (figure 28). This would have been given as an offering on the occasion of the festival when Bastet, believed during the Third Intermediate

[140]Aldred, *Jewels of the Pharaohs: Egyptian Jewellery of the Dynastic Period*. 122 and figure 68. Peter Brand, "Sacred Barks," *Oxford Encyclopedia of Ancient Egypt*, Oxford Digital Reference Shelf (Oxford University Press, 2005).
[141] Renate Germer, "Flowers," trans. Julia Harvey, *Oxford Encyclopedia of Ancient Egypt*, Oxford Digital Reference Shelf (Oxford University Press, 2005).
[142]Aldred, *Jewels of the Pharaohs: Egyptian Jewellery of the Dynastic Period*. 103.
[143] Renate Germer, "Gardens," trans. Julia Harvey and Martha Goldstein, *Oxford Encyclopedia of Ancient Egypt*, Oxford Digital Reference Shelf (Oxford University Press, 2005). Patrick F. Houlihan, "Birds," *Oxford Encyclopedia of Ancient Egypt*, Oxford Digital Reference Shelf (Oxford University Press, 2005).

Period to be the milder of two feline aspects/daughters of Re, comes back to Egypt from exile in Nubia.[144] In this context the border of rosettes is a probable reference to Re.

Compositae rosettes also appear in places where a general reference to the power of the sun would be appropriate. The many examples of beads and pendants indicate that rosettes could have functioned in a similar way to amulets, giving the wearer access to the apotropaic protection of the sun (figures 5, 6, and 16).[145] Tutankhamun's linen shroud was decorated with a number of golden beads in the shape of rosettes (figure 22). Close physically and metaphorically to the ceiling and the sky beyond, they could have been intended to represent the sun in the sky. The rosettes in the ceiling fragment from the Malqata Palace could conceivably have the same purpose (figure 15). The Third Intermediate Period cartonnage and the inner coffin of Khonsu both include *Compositae* rosettes in painted renditions of the floral collars or wraps that would have been placed around the body of the deceased or in the tomb (figures 25 and 26).[146] The plants included in these decorations were meant to symbolize life and rebirth such as papyrus and blue water lilies. The open disk shape of *Compositae* rosettes would have been especially attractive during the reign of Akhenaton when the focus in solar worship shifted to the actual sun disk or Aten. This may account for the extraordinary detail of the rosettes from the tiles at the Amarna palace (figures 17 and 18).

Scholars who dismissed the rosette motif as pure invention with no further purpose than to provide beautiful floral decoration ignored several of the founding principles of Egyptian art

[144] Patrick F. Houlihan, "Felines," *Oxford Encyclopedia of Ancient Egypt*, Oxford Digital Reference Shelf (Oxford University Press, 2005). Label for "Model tambourine with rosette border, Bastet on one side, her boat with naos on the other" Object number 17.194.2399, Metropolitan Museum of Art, New York. http://www.metmuseum.org/collection/the-collectiononline/search/549303?rpp=30&pg=1&ft=17.194.2399&pos=1.
[145] Andrews, "Amulets."
[146] Manniche, *An Ancient Egyptian Herbal*. 26-27.

and the ancient Egyptians' relationship with the natural world. The balance between symbolism and naturalism which pervades all Egyptian images of nature is very much present in *Compositae* rosettes. Their forms and variations emphasize their basis on actual plants and their solar symbolism. This analysis has aimed to show that despite a lack of clear literal connections to actual plants and a minor role in the known corpus of art objects and painted representations from Egypt, the *Compositae* rosette was seen as a part of the natural world and had a religious significance. There are several other vegetal motifs such as the cornflower and the poppy that have received less attention than the more well-known plants. Analyzing them in a similar manner would likely uncover a similar situation and provide parallel cases to that of the rosette.

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Figure List

1) Rahotep and his Wife Nofret. Mastaba of Rahotep and Nofret, Meidum. 3rd-4th Dynasty, reign of Sneferu (Old Kingdom). Painted Limestone statue group. Cairo Museum. Figure 81, page 102 in Andrews, Carol. *Ancient Egyptian Jewelry*. New York: Harry N. Abrams, 1997.

2) Wire circlet from the tomb of Princess Khnumet, daughter of Ammenemes II. Dashur. 12th Dynasty (Middle Kingdom). D. 18 cm. Gold, carnelian, lapis lazuli and turquoise. Cairo Museum, number 52859.

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4) Gold hair ornaments of Senebtisy. Tomb of Senwosret (758), Pit 763, burial of Senebtisy, Memphite region, Lisht North. Late 12th -Early 13th Dynasty (Middle Kingdom). H. 3.4 cm, Circ. 56.5 cm. Gold. Metropolitan Museum of Art, number 07.227.6-7.

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6) Thirty-two rosettes. Temple of Hatshepsut, Foundation Deposit 7-9 (G-I), Thebes, Deir el-Bahri.18th Dynasty, reign of Hatshepsut and Thutmose III (New Kingdom). Faience. Metropolitan Museum of Art, number 27.3.446c.

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10) Section of line drawing of wall 31E showing plant 58. Akh menou monument, Karnak. 18th Dynasty, reign of Thutmose III (New Kingdom). Plate VII from Beaux, Nathalie. *Le Cabinet de Curiosités de Thoutmosis III: Plantes et Animaux Du "Jardin Botanique" de Karnak*. Louvain: Peeters Press and Department Orientalistiek, 1990.

11) Rosettes growing in a hunting scene. Tomb of Intef. 18th Dynasty, reign of Thutmose III (New Kingdom). Figure IV 52 in H. J. Kantor. "Plant Ornament: Its Development in the Ancient Near East." Oriental Institute, University of Chicago, 1945.

12) Rosettes growing in a desert scene. Tomb of Mentiywey. Figure 53 in H. J. Kantor. "Plant Ornament: Its Development in the Ancient Near East." Oriental Institute, University of Chicago, 1945.

13) Rosette decoration. Thebes, Malqata, Palace of Amenhotep III. 18th Dynasty, reign of Amenhotep III (New Kingdom). Faience. Diam. 1.8 cm. Metropolitan Museum of Art, number 11.215.408.

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17) Wall tile with floral inlays. Late 18th Dynasty, Amarna Period (New Kingdom). Great Palace, Tel al Amarna. Faience. Royal Museum of Art and History, Brussels.

18) Tile with floral inlays. Great Palace, Tel al Amarna. Late 18th Dynasty, Amarna Period (New Kingdom). Faience. L.11.1 x W. 0.7 x H. 16.5 cm. Brooklyn Museum, Gift of the Egypt Exploration Society, number 35.2001.

19) Pectoral with moon bark, necklace and counterpoise. Tomb of Tutankhamun, (KV62), Valley of the Kings, Thebes. Late 18th Dynasty (New Kingdom). Gold, lapis lazuli, green feldspar, calcite, electrum, white, green, light blue, and dark blue glass. Pectoral H. 11.8 cm, W. 10.8 cm; counterpoise, H. 6.2 cm, (without tassels) W. 6.8 cm. Plate XIXc in Carter, Howard. *The tomb of Tutankhamun*. *Volume 3, The annexe and treasury: discovered by the late Earl of Carnarvon and Howard Carter.* E-Books Corporation, 2014. Also number 269K in Carter Catalog. Cairo Museum.

20) Diadem of Tutankhamun depicting uraeus and vulture. Tomb of Tutankhamun (KV62), Valley of the Kings, Thebes. Late 18th Dynasty (New Kingdom). Gold, inlaid with carnelian, chalcedony, turquoise, obsidian, light blue and dark blue glass. Average diam. 19 cm, W. of band 2 cm. Plate LXXV in Carter, Howard. *The tomb of Tutankhamun. Volume 2, The burial chamber: discovered by the late Earl of Carnarvon and Howard Carter*. Ebooks Corporation, 2014. Also number 256 in Carter Catalog, Cairo Museum.

21) Heart Scarab pectoral. Tomb of Tutankhamun, (KV62), Valley of the Kings, Thebes. Late 18th Dynasty (New Kingdom). Gold, silver, chalcedony, carnelian, calcite, lapis lazuli, turquoise, obsidian, green, red, blue, black, and white glass. H. 14.9 cm, W. 14.5 cm. Plate XIXb in Carter, Howard. *The tomb of Tutankhamun, Volume 3, the annexe and treasury: discovered by the late Earl of Carnarvon and Howard Carter*. E-Books Corporation, 2014. Also Number 267D in Carter Catalog. Cairo Museum.

22) Metal marguerite from the linen shroud over Tutankhamun's second shrine. Tomb of Tutankhamun, (KV62), Valley of the Kings, Thebes. Late 18th Dynasty (New Kingdom). Gold. Cairo Museum. Pages 23 and 164 in Carter, Howard. *The tomb of Tutankhamun. Volume 2, The burial chamber: discovered by the late Earl of Carnarvon and Howard Carter*. Ebooks Corporation, 2014

23) Painted casket. Tomb of Tutankhamun, (KV62), Valley of the Kings, Thebes. Late 18th Dynasty (New Kingdom). Wood, paint, and gesso. Cairo Museum. Plates L1-LIV in Carter, Howard and A.C. Mace. *The tomb of Tutankhamun, Volume 1, Search, discovery and clearance of the antechamber: discovered by the late Earl of Carnarvon and Howard Carter*. Ebooks Corporation, 2014.

24) Rosettes on a hill. Tomb of Ramses III (KV11). 20th Dynasty (New Kingdom). Figure IV 96 in H. J. Kantor. "Plant Ornament: Its Development in the Ancient Near East." Oriental Institute, University of Chicago, 1945.

25) Inner coffin of Khonsu. Thebes, Deir el-Medina, Tomb of Sennedjem (TT 1). 19th Dynasty, reign of Ramesses II (New Kingdom). Wood, gesso, paint. H. 188 cm. Metropolitan Museum of Art number 86.1.2a, b.

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27) Inner coffin of Anresenmes, the Singer of Amun. Thebes, Deir el-Bahri, Priests' cemetery, Pit 219. 21st Dynasty, Third Intermediate Period. Wood, gesso, paint. W. 49.5 x D. 47 x L. 172 cm. Metropolitan Museum of Art number 26.3.4a, b.

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29) Nymphaea rosette painted on a boat bow/stern. Meir. Middle Kingdom. Figure IV 24 from H. J. Kantor. "Plant Ornament: Its Development in the Ancient Near East." Oriental Institute, University of Chicago, 1945.

30) Marsh bowl. Thebes, Deir el-Bahri, near pit 219, Hathor shrine rubbish heaps. 18th Dynasty, joint reign of Hatshepsut and Thutmose III (New Kingdom). Faience, paint. H. 9 cm, Diam. 32.2 cm, Diam. of base 8.8 cm. Metropolitan Museum of Art, number 22.3.73.

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32) Blooming tropical water lilies from the Atlanta Botanical Gardens. Photographed by Shelley Burian, Atlanta GA, 05/2014.

33) Bosse from Tutankhamun's second state chariot. Tomb of Tutankhamun, (KV62), Valley of the Kings, Thebes... Late 18th Dynasty (New Kingdom). Figure IV 36 in H. J. Kantor. "Plant Ornament: Its Development in the Ancient Near East." Oriental Institute, University of Chicago, 1945.

34) Detail of sandal. Tomb of Tutankhamun, (KV62), Valley of the Kings, Thebes. Late 18th Dynasty (New Kingdom). Page 13 in Hepper, Frank Nigel. *Pharaoh's Flowers: Botanical Treasures of Tutankhamun*. London: HMSO Publications, 1990.

35) Relief of Sit-hedj-hotpe and Sit-kheper-ka, daughters of Djehuti-hotpe. Tomb of Djehuti-hotpe at Deir-el-Bersha. 12th Dynasty, reign of Sesostris III (Middle Kingdom). Painted limestone. H. 27.5 cm. Cairo museum. Plate 18 in Aldred, Cyril. *Jewels of the Pharaohs: Egyptian Jewellery of the Dynastic Period*. London: Thames and Hudson, 1971.

36) Lotus Flower Inlay. Great Palace at El-Amarna. 18th Dynasty, Amarna Period (New Kingdom). Faience. Metropolitan Museum of Art number 26.7.967.

37) The Goddess Nekhbet, Temple of Hatshepsut reproduced by Charles K. Wilkinson. Thebes, Deir el-Bahri. 18th Dynasty, joint reign of Hatshepsut and Thutmose III (New Kingdom). Metropolitan Museum of Art number 30.4.138.

38) Pectoral of Queen Mereret bearing the name of Sesostris III and depicting Nekhbet. 12th Dynasty, reign of Sesostris III (Middle Kingdom). Cairo Museum. Number 29 in Aldred, Cyril. *Jewels of the Pharaohs: Egyptian Jewellery of the Dynastic Period*. London: Thames and Hudson, 1971.

39) Inner coffin of Yuia showing a Lappet-faced vulture. Tomb of Yuia (KV46). 18th Dynasty (New Kingdom). Figure 58 in Houlihan, Patrick F., and Steven M. Goodman. *The Birds of Ancient Egypt.* Warminster: Aris & Phillips, 1986.

40) Vulture Pectoral. Tomb of the Three Foreign Wives of Thutmose III, Thebes, Wadi Gabbanat el-Qurud, Wadi D. 18th Dynasty, reign of Thutmose III (New Kingdom). Gold sheet. Maximum H. 13.5 cm, maximum W. 37.3 cm. Metropolitan Museum of Art number 26.8.105.

41) Hieroglyph of the "Horus falcon". Tomb of Ramesses IX (KV 6). 20th Dynasty. Figure 61 in Houlihan, Patrick F., and Steven M. Goodman. *The Birds of Ancient Egypt*. Warminster: Aris & Phillips, 1986.

42) Blooming daisies from the Atlanta Botanical Gardens. Photographed by Shelley Burian, Atlanta GA, 05/2014.

43) Blooming *Chamomilla matricaria*. Photographed by Shelley Burian. Atlanta GA 05/2014.

44) Pied Kingfisher swooping down in a marsh. Fragment of the "Green room" wall painting, North Palace of Akhenaton, El-Amarna. 18th Dynasty Amarna Period (New Kingdom). Color plate 8 in Weatherhead, F. J. *Amarna Palace Paintings*. London: Egypt Exploration Society, 2007.

45) Blooming tropical water lily in profile from the Atlanta Botanical Gardens. Photographed by Shelley Burian. Atlanta GA 05/2014.

46) Line drawing of wall 31E showing figures 31-64. Plate XIII in Beaux, Nathalie. *Le Cabinet de Curiosités de Thoutmosis III: Plantes et Animaux du "Jardin Botanique" de Karnak*. Louvain: Peeters Press and Department Orientalistiek, 1990.

47) Line drawing of wall 31E showing figures 21-58. Plate VIII in Beaux, Nathalie. *Le cabinet de curiosités de Thoutmosis III: plantes et animaux du "Jardin botanique" de Karnak*. Louvain: Peeters Press and Department Orientalistiek, 1990.

48) Detail of marsh scene. Tomb of Menna (TT69), Long hall right (LHR), Theban Necropolis. 18th Dynasty (New Kingdom). Figure 2.15, page 78 in Hartwig, Melinda K. *The Tomb Chapel of Menna (TT 69)*. Cairo: The American University in Cairo Press, 2013.

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Figure 32

Blooming tropical water lilies from the Atlanta Botanical Gardens. Photographed by Shelley Burian, Atlanta GA, 05/2014.

Figure 42

Blooming daisies from the Atlanta Botanical Gardens. Photographed by Shelley Burian, Atlanta GA, 05/2014.

Figure 43

Blooming Chamomilla matricaria. Photographed by Shelley Burian. Atlanta GA 05/2014.

Figure 45

Blooming tropical water lily in profile from the Atlanta Botanical Gardens. Photographed by Shelley Burian. Atlanta GA 05/2014.