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Composite Mirrors of the Ancient Maya: Ostentatious Production and Precolumbian Fraud

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Occasionally in archaeology there is a tendency to place artifacts into conceptual categories, without really looking at the artifacts themselves. A quick "analysis" of an object might mention length or weight but ignore other features such as composition or origin. Such is the case with Mesoamerican mirrors. These artifacts are counted in reports, but rarely given the second glance that shows the diversity of composition and form with which the Maya endowed these special objects.

First, it should be observed that there are many different kinds of Prehispanic mirrors, primarily iron-ore derivatives. Mirrors of different types have been found in Olmec contexts (e.g., Carlson 1981; Gullberg 1959; Heizer and Gullberg 1981). Hematite (Fe_2O_3) and Pyrite (FeS_2) mirrors are known from later Maya contexts (e.g., Zamora 2002). Composite pyrite mirrors, such as mosaic pieces over a uniform background, are also relatively common in Maya excavations. In addition to these iron-based mirrors, obsidian mirrors are known from Mexican sites, and anthracite coal mirrors have been found in South America (Calvo and Enoch 2007).

Mirrors and mosaic fragments are often formed of iron-based materials (such as hematite or pyrite) which give an excellent luster when polished. The reported reflectivities are 21% for magnetite, 28% for hematite, and 55% for pyrite (Craig and Vaughan 1981, cited in Lunazzi 1996). And so the story often ends. However, a chance discovery by Antonio Prado and Guillermo Mata has complicated the idea of iron-based mirrors. They discovered that some mirrors when viewed under a microscope are actually "composite" mirrors, rather than a single piece of worked stone or "uniform mirror." This discovery opens a window into the production of ancient Maya "knock-offs." Essentially, these mirrors may have been produced more easily than uniform mirrors, while attaining the luster and prestige of owning a mirror in this ancient society.

This article examines the evidence for mirror use in ancient Maya society, identifies the relative frequency of these objects archaeologically, and then delves into the composition of composite mirrors. Finally, an economic model of prestige is invoked to address the question of their production.

Mirrors for the ancient Maya

Mankind loves to adorn himself. Necklaces, tattoos, lipstick, powder, clothes, earrings, etc., have long decorated the human form. With the urge to adorn comes the need to verify the overall effect and hence a common use for mirrors. The earliest known manufactured mirrors were made

Figure 1. Primping while dressing. Vessel K1454 in Justin Kerr's online database at www.mayavase.com. Photo copyright Justin Kerr.

from obsidian and come from burials dated to BC 6000 from Anatolia (Enoch 2006:755). In the New World, manufactured mirrors are known as early as BC 1925 (Enoch 2006:778). Mirrors have been discovered at Aguateca (Zamora 2002), Altun Ha (Pendergast 1969), Copan (Nielsen 2006), Kaminaljuyu (Kidder et al. 1946:13), La Venta (e.g., Carlson 1981; Gullberg 1959:280-283, Pl. 62; Heizer and Gullberg 1981; Lunezzi 1996a, 1996b), Nebaj (Smith and Kidder 1951), Tikal (e.g., Hellmuth 1967), and Teotihuacan (e.g., Fash and Fash 2000), just to name a few sites.

Courtly life of the ancient Maya, as portrayed on fine ceramics, seems empty without mirrors. Rulers primp while being dressed (e.g, K787, K1454, and K4096[1]) (Figure 1). They dance with mirrors (e.g., K505, K5233, and K6341), and mirrors are present in the throne room (e.g., K625, K1463, K1728, K2914, K3203, K5110, K6315, K6666, and K8926) (Figures 2–3). Mirrors are also not just for the elite. Mirror fragments from Piedras Negras have been found in rather humble structures (Nelson 2000:128). Several of these were composite mirrors rather than uniform pyrite.

Mirrors were used for more than just vanity. Among the Huichol, mirrors have deep religious significance (Blosser 2000). Mirrors are communicators with gods and other worlds (e.g., Rivera Dorado 1999). They serve as a means of concentrating one's power to divine spiritual realms. Interpreted in this light, the various palace scenes painted on ceramics in which the ruler is staring into a mirror may represent episodes in which the ruler is communicating with particular deities during a palace interview.

Further, the reflective properties of concave mirrors are such that reflected images can be seen "floating in front of [the] mirror" (Lunazzi 1996a:4). This aspect of the mirror's optical properties may have increased the divinatory power of the holder—perhaps as reflected objects were manipulated during rituals. Another probable use of mirrors was for lighting fires by concentrating the sun's rays, and they had other important roles in iconography and ritual (see Taube 1992, 2000).

Relative frequencies

In light of their religious and practical use, it is not surprising that mirrors are recovered from both monumental and quotidian contexts in the Maya lowlands. The curious aspect is their low frequency and generally small size. Of course, pyrite mirrors are durable. The uniform pyrite forms are made from a solid piece of pyrite, which can last for decades with proper care. As a consequence, they rarely need replacement unless severely broken. The luster of a uniform pyrite mirror adequately reflects the world, with only an occasional buffing necessary. When such a mirror was broken, its replacement value might have been enormous.

Uniform and Composite Mirrors

Uniform pyrite mirrors were made from a solid stone hewn from somewhere in the Sierras de las Minas toward the highlands of Guatemala. Pieces of ore would

[1] "K-numbers" refer to photographic rollouts of Maya ceramics in Justin Kerr's online database at www.mayavase.com.

Figure 2. Dancing with mirror. Vessel K5233 in Justin Kerr's online database at www.mayavase.com. Photo copyright Justin Kerr.

Figure 3. Mirror in throne room. Vessel K625 in Justin Kerr's online database at www.mayavase.com. Photo copyright Justin Kerr.

need to be found of sufficient size and depth without inclusions. The piece would then be flaked down to the proper dimensions, and then endlessly polished and burnished to achieve the desired luster. The working hours put into creating these mirrors probably added to their overall value.

In contrast, composite mirrors are formed from rock, clay, and pyrite (or hematite) grains. In 2001, Antonio Prado and Guillermo Mata Amado were examining a pyrite mirror pulled from Lago Amatitlan in front of the Mexicanos site (Mata Amado 2003) under high magnification. They discovered that three distinct layers could

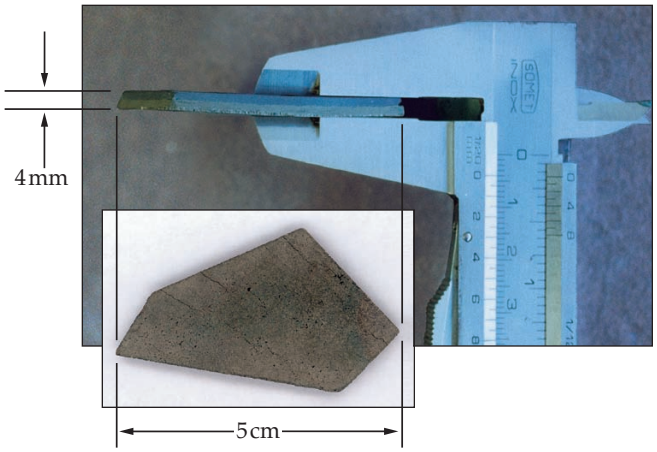

Figure 4. Maya composite mirror fragment (mosaic piece).

be identified (Figures 4 and 5). This chance discovery of a composite mirror needed more investigation. Mata Amado provided a mirror fragment from the same location for examination under a scanning electron microscope at Pennsylvania State University (this technology is non-destructive) (Figure 6). Dr. Barry E. Sheetz examined the fragment and helped identify the distinct layers by their chemical signatures. The scanning electron microscope provided pictures of the distribution of seven elements found in the sample: iron, silicon, sulfur, potassium, aluminum, oxygen, and carbon. These individual pictures were combined in Photoshop to build a composite elemental map of the distribution of each element (Figure 7). The combined image provides a way of seeing how the elements interact with one another. The chemical signature of each layer can easily be read from the "map."

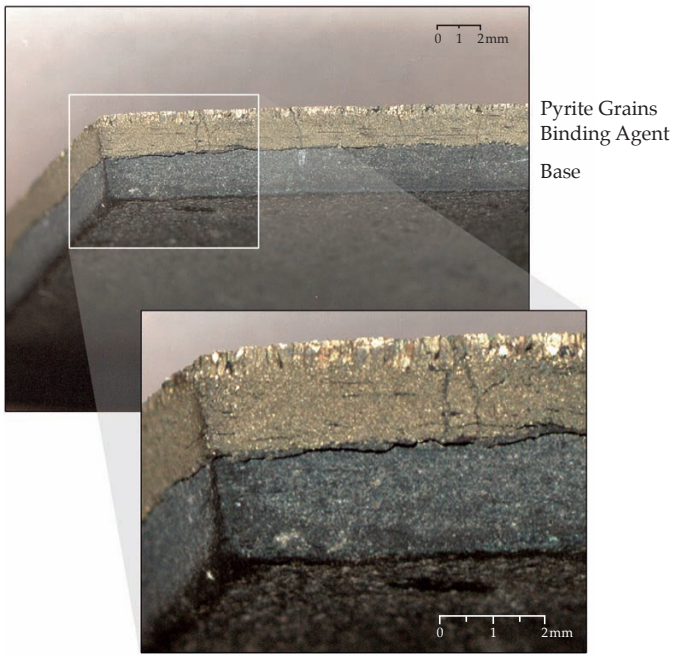

Figure 5. Closeup of composite mirror fragment, showing layers.

The bottom layer is made from pyrite. This is clearly shown in the composite elemental figure. Pyrite is composed of iron and sulfur. Sulfur, not oxygen (as found in hematite) is a major contributor to the base and surface of the fragment. This kind of stone is found in the Sierra de las Minas region of Guatemala. The stone forms the mirror base. It was flaked and ground to the desired dimensions. The thickness of the stone used in this analysis is only 2 mm. The extreme thinness is rather remarkable.

The middle layer consists of a binding agent. The elements involved in this layer are silicon, potassium, aluminum, oxygen, and carbon. Iron and sulfur both appear, but probably as crystals that were pushed down into the edge, rather than inherent pieces of the mix. From this combination, we think that ceramic clay appears to have been used as the binder without significant tempering agents. This layer is 1.5–2 mm deep. We believe that the clay was simply pressed against the slate, although other preparation may have been involved. There are some odd filaments visible in the scan of the sample that may be organic binding agents, or perhaps some decomposing pyrite. Additional tests would be necessary to identify them.

The top layer consists of crystals of fine pyrite (and perhaps other minerals). The chemical signature of the crystal blocks is very clear—iron and sulfur. The crystals are thought to have been pressed into the clay while it was still soft. This is indicated by the distribution of pyrite crystals around the clay. The surface thickness is only ~0.5 mm deep—the depth of the crystal "dust" used.

The reconstructed manufacturing sequence begins in the Sierra de las Minas. Pyrite ore was found and flaked into a disk of the proper dimensions. Once flaked, clay was applied to the disk. Pyrite dust was then pressed into the clay. The dust could have come from the flaking stage, purposely ground, or naturally occurring decomposing pyrite ore. Then the mirror would have been baked, much like the methods used in making ceramics. Once the clay hardened, the rough edges were polished off. Likewise the pyrite grains were polished until a mirror luster was achieved. The finished product not only looked like a solid pyrite mirror, but perhaps weighed about the same.

Value and energy

If the ancient Maya placed value on objects according to aesthetic appeal, then the composite and uniform mirrors would have had the same value. Both could be bur-

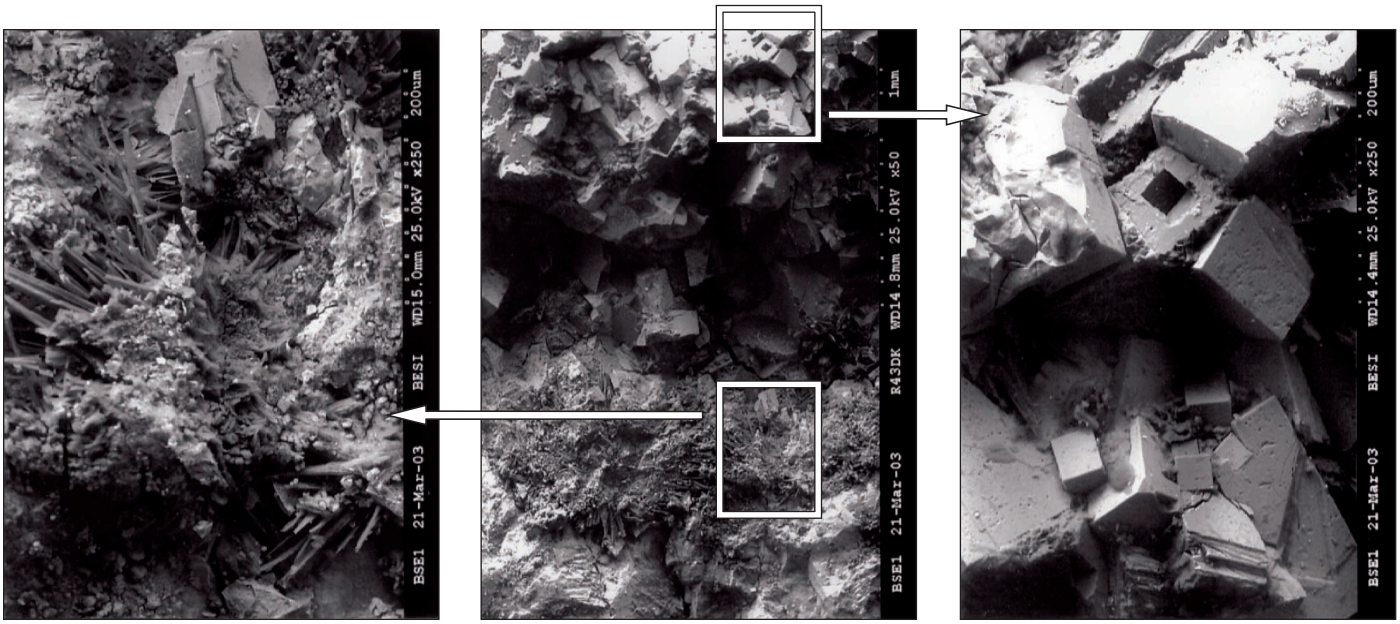

Figure 6. Electron scanning microscope, detail of high magnification.

nished to the same degree and made to appear identical. Indeed, the difference between them can scarcely be discerned with the naked eye.

Alternatively, if objects were valued according to the amount of labor expended in their creation, then the uniform mirrors are vastly more expensive than the composite mirrors (e.g., Kidder et al. 1946:131). Uniform mirrors require a higher degree of ability in all stages of their manufacture. Suitable ore needs to be found in a pure state. The mirrors would need to be ground to the proper shape; the edges and faces would need to be smoothed and burnished. During each stage, the possibility of breakage is also high.

The creation of composite mirrors involved less work. We posit that the pyrite grains used in the creation of composite mirrors would have been acquired from the same sources used in creating the uniform mirrors, and perhaps from the very debitage of their creation. Pyrite is relatively common and its use would require only some faces to be smoothed. Ceramic clay sources were well known, and pyrite grains could be easily generated by breaking pyrite fragments into dust. Burnishing involves time and effort, but little artistic skill or expertise would be required to make this product.

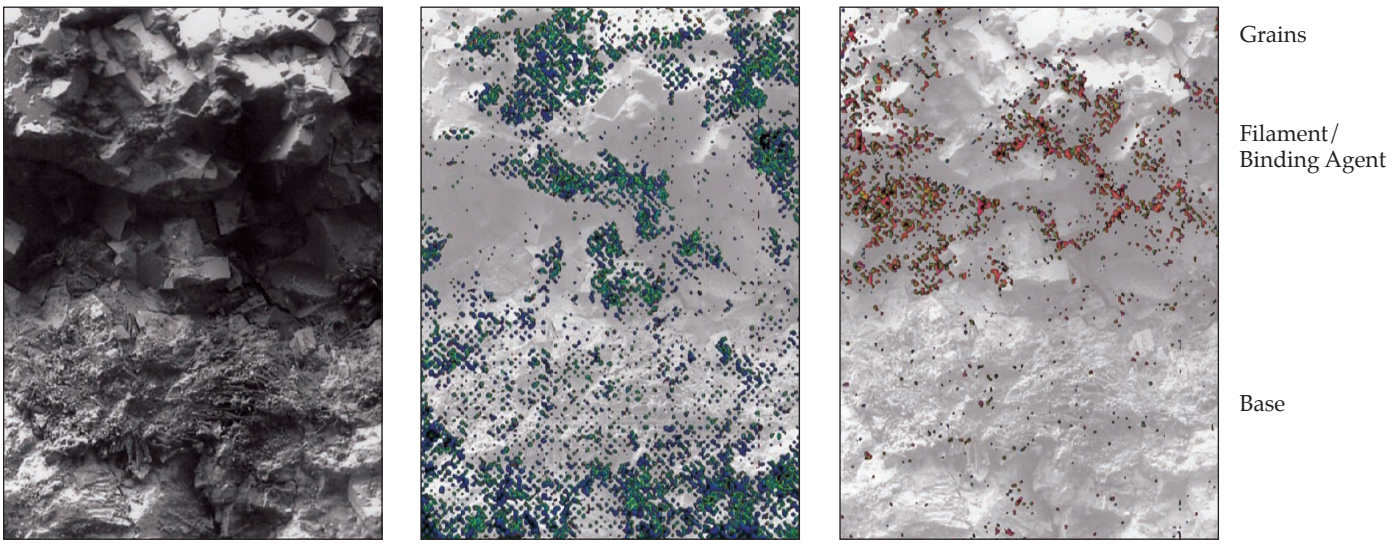

Figure 7. Electron scanning microscope, element composition: (a) high magnification view of sample; (b) iron and sulfur particle distribution; (c) aluminum and silicon particle distribution.

It is tempting to identify the composite mirrors as cheap knock-offs of uniform pyrite mirrors, and there is some justification for this assumption. Composite mirrors are present at Piedras Negras in non-elite contexts. We hope that other investigators will examine their mirror artifacts under low magnification and see how common they are elsewhere.

However, there is another use for these mirrors. Large uniform mirrors, such as those shown in palace scenes, would be very difficult to make and transport. But composite mirrors might have been easier to make to the desired size or as mosaic pieces. We think that one such example has been found. In the basement of the Museo Nacional de Guatemala lie many of the artifacts from Kaminaljuyu from the excavations directed by the Carnegie Institute (Kidder et al. 1946). The material from Mound A, Tomb III contains a large clay disk with a diameter of approximately 18 cm. In the course of excavation, the archaeologists found granules of metallic ore which appeared to be associated with the disk (the museum tag reads: "C-151 A. Ga.46-6 Esperanza Mont. A. Tumba III. Kaminaljuyu, Depto. de Guatemala Carbon magnetic (?) C.I.W."). Unfortunately, this artifact is not described in the Kaminaljuyu volume by Kidder, Jennings, and Shook (1946). We posit that this disk was a large clay mirror whose binding agent disintegrated and released the granules. In this example, instead of a slate backing, the mirror was wholly made of baked clay with the granules attached to the clay, perhaps with an organic binding agent (glue).

Also, some polygonal pyrite mosaic pieces are actually composite mirrors. Mosaics are comprised of cut pieces of polished pyrite adhered to a stone background. The polygonal pieces are shaped to form a complete picture or reflective face. The artifact examined via the scanning electron microscope was a mosaic piece. Its combined thickness was only 4 mm. It once adhered to a stone background, long since lost. This suggests that composite mosaic pieces might form some of the large mosaic mirrors known from the Maya lowlands. In addressing the manufacture of pyrite-incrusted plaques or mosaics, Kidder, Jennings, and Shook note:

> They must also have been very costly, for the labor involved in their manufacture was obviously enormous, to say nothing of the presumably high value of the material which went into their incrusted faces. Pyrite, with a hardness of 6.5 and with no natural cleavage planes to facilitate subdivision of the crystals, could not have been other than most difficult to work. Yet every plaque was mounted with dozens or scores of plates cut to precisely the same thickness and shaped to fit exactly. ... Nothing produced in aboriginal America seems to us to rival these plaques in the matter of skilled and meticulous craftsmanship. One hesitates even to guess at the number of man-hours that must have been expended on the making of each one of them. (Kidder et al. 1946:131)

The ancient Maya used composite mirrors as mosaic polygon pieces. Their use reduced the expenditure of time and energy in the creation of mosaic mirrors by providing an easier manufacturing method for each polygon.

If these suppositions are accurate, then some of the large mirrors shown in palace scenes might have been made from similar materials. Small uniform pyrite mirrors would have been hand-held, but large composite mirrors would have graced the throne room for divination purposes and for their reflective qualities. This explains the basket or mirror holder often present in palace scenes. Composite or mosaic mirrors would be potentially frail entities that would require the protection of a basket when not in use. (Alternatively, the basket might have been part of the presentation of divination; neither use is excluded.) Hence, rather than being wholly cheap knock-offs, composite mirrors provided a larger reflective surface for the ruler in which to divine the future of his polity.

Conclusions

Ancient Maya iron-based mirrors come in two general varieties. They are either uniform mirrors or composites. Composite mirrors are created with a stone base, a clay binding layer, and pyrite grains. This kind of mirror was easier to produce than uniform mirrors. Mirrors have both reflective and divinatory properties. Large mirrors are often portrayed in palace scenes on ceramics. A possible example of a large composite mirror is known from excavations at Kaminaljuyu. Composite mirror pieces were also used in mosaics. Investigations into Maya mirrors are just beginning, but we hope that this initial foray will help others identify an important typological distinction in an overlooked artifact category.

Acknowledgments

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Lord Kingsborough and his Contribution to Ancient Mesoamerican Scholarship: The *Antiquities of Mexico*

Sylvia D. Whitmore

Irish peer Lord Kingsborough (1795-1837) made a significant contribution to Mesoamerican scholarship by initiating, financing, compiling, and editing the nine volumes of the *Antiquities of Mexico* (Kingsborough 1831-1848). His remarkable legacy is apparent, as he is still referenced today in many publications concerned with ancient Mesoamerican antiquity. Unfortunately, his extraordinary passion and dedication in collecting and commissioning copies of Mesoamerican manuscripts were factors in his untimely death. Although articles have been written about him, as yet no comprehensive biography of this remarkable, enigmatic man has yet been undertaken. Who was Lord Kingsborough and what motivated this man to spend a large part of his life collecting, editing, and organizing the copying of ancient Mesoamerican manuscripts? While his ability to manage his own finances and reputation appear questionable, this paper investigates Kingsborough's motivation and methods in producing the *Antiquities of Mexico* and the factors that prevented the proper recognition of the significance of his work.

The *Antiquities of Mexico*

The nine volumes of the *Antiquities of Mexico* contain facsimiles and texts descriptive of ancient Mexican manuscripts and paintings preserved in the royal libraries of Paris, Berlin, and Dresden, the Imperial library of Vienna, the Vatican library, the Borgian Museum at Rome, the library of the Institute of Bologna, and the Bodleian Library at Oxford. These include, among others, facsimiles of sixteen significant manuscripts such as the *Codex Mendoza* (Figure 1), the *Dresden Codex* (Figures 2–3), and the *Telleriano-Remensis*. Facsimiles of drawings from the *Monuments of New Spain* by Dupaix are also included (see the title page of the *Antiquities of Mexico*, Volume 1). It is considered that the first three volumes of the *Antiquities of Mexico* contain facsimiles of almost all of the known ancient pictorial Mexican manuscripts and paintings that were accessible to Kingsborough at the time (Glass 1975:22). However, Kingsborough was apparently denied permission to publish a copy of the Aztec manuscript *Codex Borbonicus* held in the Bibliothèque de l'Assemblée Nationale, Paris (Glass 1975:22).

The production of these volumes was a monumental undertaking. Each large volume of the *Antiquities of Mexico* is approximately 57 x 57 cm and weighs about 29.5 kg. The nine volumes took approximately eighteen years to produce at a cost to Kingsborough of about forty thousand pounds. The magnitude of this sum can be gauged when it is considered that a family during this period could exist reasonably well on about five hundred pounds per year (Goodkind 1985:54; Goodwin 2004). Power (2000:96) writes that the first volume was printed in 1830, and in 1831 six more volumes were released. However, a review of these works in a contemporary journal records an earlier publication (Foreign Quarterly Review 1832:90; Graham 1977:50). The last two volumes of the *Antiquities of Mexico* were published after Kingsborough's death. A tenth volume was planned but was never completed (Power 2000:96). This remarkable venture was extremely demanding of time and resources. Kingsborough was able to undertake the work because of his privileged background and education.

Family background

Lord Kingsborough's birth name was Edward King. He was the eldest of five children born into a wealthy aristocratic Irish dynasty. His family owned estates in various areas of Ireland, particularly in the County of Cork (Power 2000:10-27). Edward King's grandfather Robert (1754-1799) was the second Earl of Kingston in the Irish peerage. Upon Robert's death, Edward's father George King (1771-1839) inherited the title of Earl of Kingston. Edward King's mother was Lady Helena Moore (1773-1847), the only daughter of Stephen Moore, the first Earl Mountcashell. After Edward's father George became an earl in 1799, Edward was given the courtesy title of Viscount Kingsborough (Goodwin 2004). However, he was more commonly known as Lord Kingsborough. Unfortunately, although he came from a privileged background, his family fortunes were unstable. His father George was heavily involved in politics, which contributed to his extravagant expenditure (Power 2000:59; Todd 2003:178, 280-298, 334).

In 1823, George received a large inheritance on the death of his mother. He also borrowed a significant amount of money to build a magnificent castle at Mitchelstown in Cork, after the style of Windsor Castle. George was a strong supporter of the monarchy (Todd 2003:256).

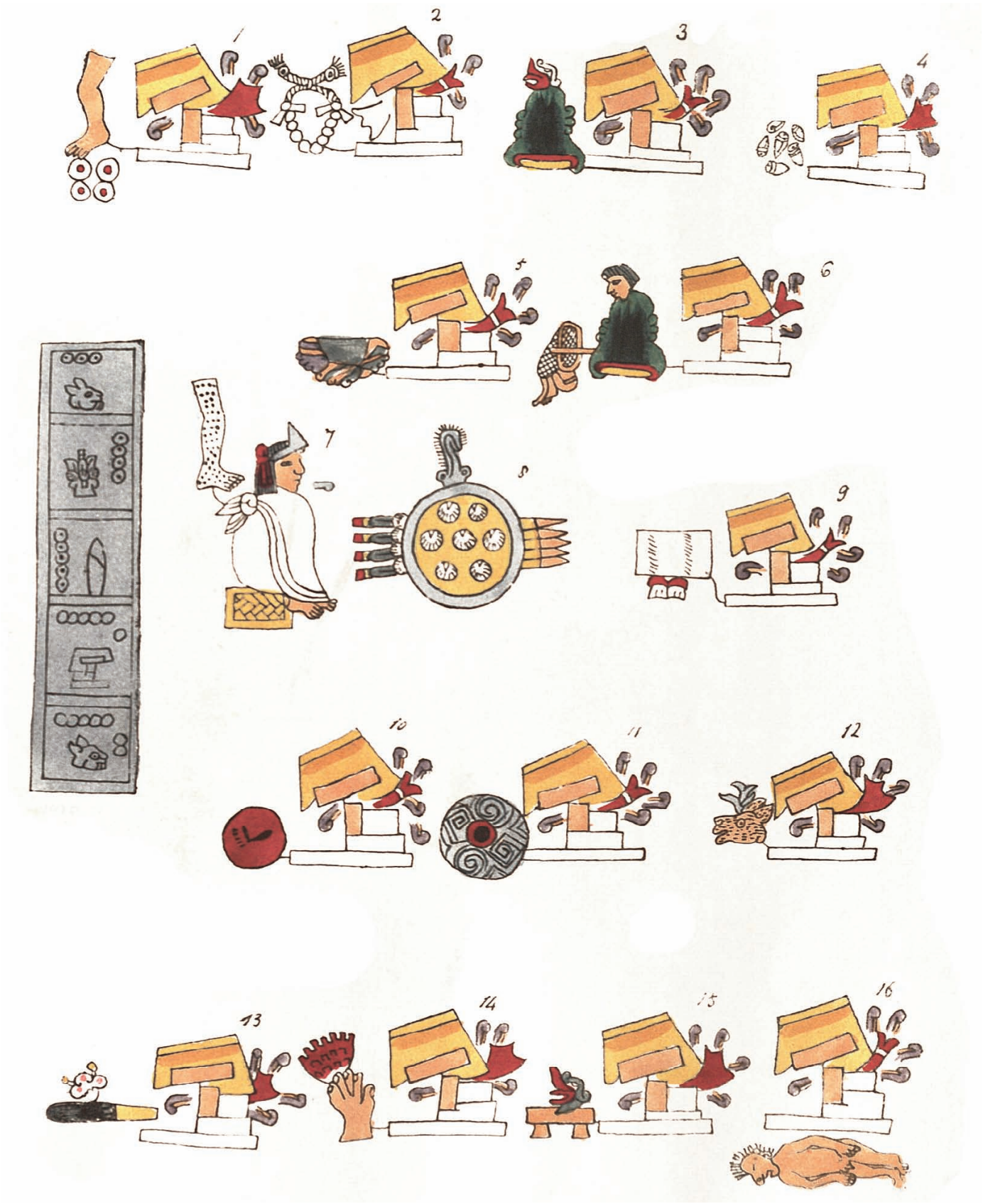

Figure 1. Facsimile page of the *Codex Mendoza* from the *Antiquities of Mexico* (photograph and retouching by Marc Zender).

Figure 2. Facsimile pages (4–7) of the *Dresden Codex* from the *Antiquities of Mexico*.

Hence, a reason for this extravagance was to impress King George IV and to encourage the king to visit him in Ireland. This project caused him to accumulate debts of about four hundred thousand pounds, far beyond his ability to repay (Power 2000:71-85; Todd 2003:334-335). This debt is significant, as it is considered by some authors to be one of the contributing factors in the eventual death of his son Edward, Lord Kingsborough, in a Dublin prison at the age of forty-one (Goodwin 2004; Munby 1967:122).

Education

Little is known about Kingsborough's early life prior to his attendance at Oxford University. It is considered that he was educated at Eton prior to attending Oxford (King-Harman 1959:84). Records indicate that he matriculated at Exeter College, Oxford, on June 25, 1814, and in the Michaelmas term gained a second class in the study of classics. He did not graduate (Foster 1891:794; Goodwin 2004). It was probably at Oxford that he met Sir Thomas Phillipps, who was an undergraduate at about the same time (Graham 1977:46).

Sir Thomas Phillipps

The friendship between Phillipps and Kingsborough evidently continued after they left Oxford, as evidenced by an exchange of letters between the two men occurring during the period 1826 to 1830 (Graham 1977:45-50). Phillips was a bibliophile who was reported to have accumulated about fifty to sixty thousand books during his lifetime (Graham 1977:45). Hence, it is possible that Phillipps' obsession and sheer enthusiasm for

books and ancient manuscripts inspired and motivated Kingsborough. Phillipps wrote that Kingsborough discussed the development of the *Antiquities of Mexico* with him and that he encouraged him in his endeavours (Graham 1977:45-46; Munby 1967:122). In addition, Phillips noted in his own catalogue of manuscripts that he gave Kingsborough a letter of introduction to Dr. Bandinel of the Bodleian Library at Oxford (Graham 1977:53, n. 3). The intention of this introduction was to enable Kingsborough to view a number of Mexican manuscripts held in the Bodleian Library, including a copy of the *Codex Mendoza* (Graham 1977:49).

Some authors consider that it was the viewing of the *Codex Mendoza* that inspired Kingsborough to later develop and publish the *Antiquities of Mexico* (Goodkind 1985:54; Goodwin 2004; King-Harman 1959:84; Munby 1956:11; Somerville-Large 1990:205). Kingsborough included a facsimile of the *Codex Mendoza* in the first volume of the *Antiquities of Mexico*, with the Spanish interpretation of the codex included in Volume Five. However, it is deemed by Ian Graham that Kingsborough's interest in Mexican antiquities preceded his examination of the *Codex Mendoza*. Graham (1977:46) cites a note in Sir Thomas Phillipps' personal catalogue of manuscripts indicating that Kingsborough had actually contemplated or started his work on the *Antiquities of Mexico* prior to this event.

Elected to Parliament

Kingsborough followed the family tradition established by his grandfather and was elected as a Member of Parliament for Cork County in 1818 and 1820 (Cokayne 1982:3:297-298; Goodwin 2004). However, unlike his father and grandfather he had little interest in politics. He resigned his seat in 1826, no doubt to avoid the difficulties created by the political situation in Ireland and to pursue his interest in studying works for the *Antiquities of Mexico* (Goodwin 2004). In 1825, prior to his departure from Parliament, Kingsborough engaged the artist Agostino Aglio to undertake illustrations for the first three volumes of his great work (Graham 1977:50). After his resignation from Parliament, he became somewhat reclusive and spent most of his time engaged in his research in the White Knight's Tower at Mitchelstown Castle, where he assembled all his valuable collection of books and manuscripts (Power 2000:95).

Collecting

An outcome of the French Revolution (1789-1799) was that many collections of manuscripts and books were broken up and distributed throughout Europe, providing an opportunity for English collectors (Graham 1977:45; Munby 1967:15). In addition, after the revolution in Mexico in 1821 that overturned Spanish rule, books relating to ancient Precolumbian civilization began to emerge in London. Around this time access to Prehispanic archaeological sites became easier, resulting in considerable interest from foreign explorers (Tripp 2004:32-35). Kingsborough searched many collections in Europe, locating manuscripts in places such as Paris, Berlin, Dresden, and the Vatican (Goodkind 1985:54). He also sent the agent Obadiah Rich to Spain in 1830 and 1831 to obtain manuscripts relating to the ancient history of America (Graham 1977:50). Rich apparently arranged with King Ferdinand of Spain to have ten scribes copy all the manuscripts concerning America located in the libraries of Spain. In return, King Ferdinand of Spain was eventually presented with a copy of the *Antiquities of Mexico* (Graham 1977:50). Kingsborough never travelled to Mexico himself (Somerville-Large 1990:205). However, he did support exploration in this region.

Waldeck

In 1834, Kingsborough funded an expedition to the Yucatan that was undertaken by the colorful, enigmatic French explorer Jean Frédéric Maximilien Waldeck (Coe 1992:76-77). The exact date and circumstances in which Kingsborough actually met Waldeck are unknown. Waldeck originally went to Mexico in 1825 as an engineer but was unsuccessful in this occupation. Later, in 1828, he was employed by the new National Mexican Museum for six years as an artist and engraver. In his final years in Mexico, he painted and sketched various archaeological sites in the Yucatan. He is reported to have named his drawing of the Pyramid of the Magician at Uxmal, "Le Pyramid de Kingsborough," after his benefactor (Tripp 2004:32-41).

Motivation

A prime motivation for Kingsborough's passionate dedication to the research and production of the *Antiquities of Mexico* was his fervent belief that the indigenous Mexicans were the direct descendants of the ten Lost Tribes of Israel (Goodkind 1985:57). The quest for the Lost Tribes of Israel had been a source of intrigue and mystery for many centuries (Goodkind 1985:54; Parfitt 2004:1, 100-103). It was a popular theme during the eighteenth and nineteenth centuries, comparable to the interest in legends such as the search for the Holy Grail (Parfitt 2004:102). Kingsborough devoted a large section of Volume Six of

the *Antiquities of Mexico* to his theory that the ancient Mexicans were descendants of these lost tribes. This volume contains an essay written by Kingsborough, entitled "Arguments to show that the Jews in the early ages colonized America." Biblical passage after biblical passage is quoted in an attempt to highlight the similarities between the culture and religion of the ancient Mexicans and the Jews (Kingsborough 1831-1848:6:232-420). For example, Kingsborough considered that the ancient Mexican temples resembled the architectural style of the Jewish temples. He noted that the Jews and the ancient Mexicans both placed fringes on their garments, and he considered that this highlighted similarities in the attire of the two respective cultures. Furthermore, he quoted Sir William Penn as to a resemblance between the features of Mexican and Jewish children. Kingsborough even cited paintings in the Dresden Codex which he considered to represent the Hebrew story of the fall of Satan (Kingsborough 1831-1848:6:109,156, 274, 414-415). However, the examples he cites of the similarities between the Jewish and ancient Mexican cultures are extremely generalized or exaggerated. Kingsborough did not give any consideration to the possibility that the ancient Mexicans had the natural ability to develop their own knowledge and skills.

Legacy

It could be argued that Kingsborough wanted to make a name for himself as a scholar and leave something for posterity. He sent copies of his work to various royal houses and to notable libraries and museums. Four sets of the volumes were made with colored plates and were printed on vellum. Special copies were donated to the Bodleian Library at Oxford, the Louvre in Paris, the Imperial Library at St. Petersburg, and the Royal Library in Berlin. Kingsborough received gifts in appreciation from the Emperor of Russia and King Frederick William IV of Prussia (Power 2000:96). Copies were also donated to the British Museum (Somerville-Large 1990:209). However, it is probable that the principal force that motivated Kingsborough to spend his lifetime collecting ancient Mesoamerican manuscripts was neither a quest for fame through the production of the *Antiquities of Mexico,* nor the discovery of the Lost Tribes of Israel, but rather a passion for collecting ancient manuscripts. It is also probable that this passion was at least partly due to the influence of the antiquary and book collector, Sir Thomas Phillipps. This contention is supported by the significant collection of manuscripts Kingsborough compiled. For example, he owned many rare books including the rare 16th century manuscript, the *Memorial of the Indians of Tepetlaoztoc to the King of Spain*, which was not included in the *Antiquities of Mexico* (Hunter 1917:153). Unfortunately, Kingsborough's work was cut short by his untimely death, an event in which it is possible that his own misjudgement played a part.

Death

Kingsborough is reported to have been imprisoned for debt in Dublin in 1837 (Power 2000:97). It has been suggested that the debt incurred was actually his father George's, as Edward was reported to have been the guarantor for his father's debts (Goodwin 2004). George was declared insane in 1833 and was confined to a mental institution, which would have created difficulties for debt collectors (Power 2000:93).

Funding for Mitchelstown had been restricted, as the estate had been placed in Chancery because of his father's mental illness. Kingsborough was given an allowance to manage the estate and live in the castle. However, this money was sufficient only for the management of the estate and not for financing his personal scholastic endeavours.

Kingsborough also must have acquired his own large debts in relation to the preparation of the *Antiquities of Mexico*, as it was a paper merchant who had him arrested and imprisoned, supposedly for a minor debt (Power 2000:97; Somerville-Large 1990:209; Todd 2003:337). Unfortunately, he was only in prison a few days when he caught typhus fever and died on February 27, 1837 (Goodwin 2004). Ironically, it is reported that on his father's death two years later Edward would have inherited a large fortune (Goodwin 2004; Somerville-Large 1990:209; Todd 2003:337).

Kingsborough did not seem to have sought support in his troubles from his friend Sir Thomas Phillipps. Phillipps sent a letter to Kingsborough two months after his death, seeking information about the progress of the *Antiquities of Mexico*. Hence, it is apparent that Phillipps was unaware at that time of his friend's imprisonment and subsequent death (Graham 1977:49). Indeed, King-Harman (1959:84-85) a descendent of Kingsborough, relates in a privately published document that it was almost unthinkable for a peer to be thrown into prison for debt in Ireland during Kingsborough's time. He suggests that this episode may have been a deliberate strategy on behalf of Kingsborough himself to persuade the Lord Chancellor to release more funding from his father's estate. Hence, this could explain why Phillipps was unaware of Kingsborough's imprisonment. It is possible that Kingsborough did not expect to be imprisoned for long, if indeed at all. Kingsborough's

Figure 3. Facsimile pages (15–17) of the *Dresden Codex* from the *Antiquities of Mexico*.

career was thus cut short. He left a considerable legacy, however, for those interested in Mesoamerican antiquity. In assessing this legacy it is also necessary to consider the role of the artist Agostino Aglio, who was commissioned by Kingsborough to produce the numerous facsimiles.

Agostino Aglio

The artist Agostino Aglio was a significant contributor to Kingsborough's Mesoamerican legacy. He was born in Cremona in Italy in 1777. In 1787 Aglio relocated with his family to Milan where he was sent to the Collegio dei Barnabiti to be educated. He was later taught painting by the Italian master Andrea Appiani and drawing and design by Giocondo Albertolli at the Accademia di Brera in Milan. Eventually he moved to Rome and worked in the studio of landscape painter Luigi Campovecchio. In 1799 he was employed by the architect William Wilkins, a member of the Royal Society of British Artists, to undertake drawings on his antiquarian expedition to Sicily, Greece, and Egypt (Newton 2004). In 1803 Wilkins approached Aglio to take up the position of drawing master at Caius College, Cambridge. Aglio accepted but later quarrelled with Wilkins and instead went to London where he received many painting commissions. He produced his first lithographs in 1809 (Graves 1905:14; Johnson 1975:3; Newton 2004). Aglio was engaged by Kingsborough in 1825 to undertake the lithographic illustrations for the *Antiquities of Mexico* (Graham 1977:50).

It was reported in a note by Sir Thomas Phillips that Aglio had endeavoured to claim copyright to the *Antiquities of Mexico*. Phillips considered that Kingsborough allowed this to happen because he was too unassuming to put his own name on the work (Graham 1977:51;

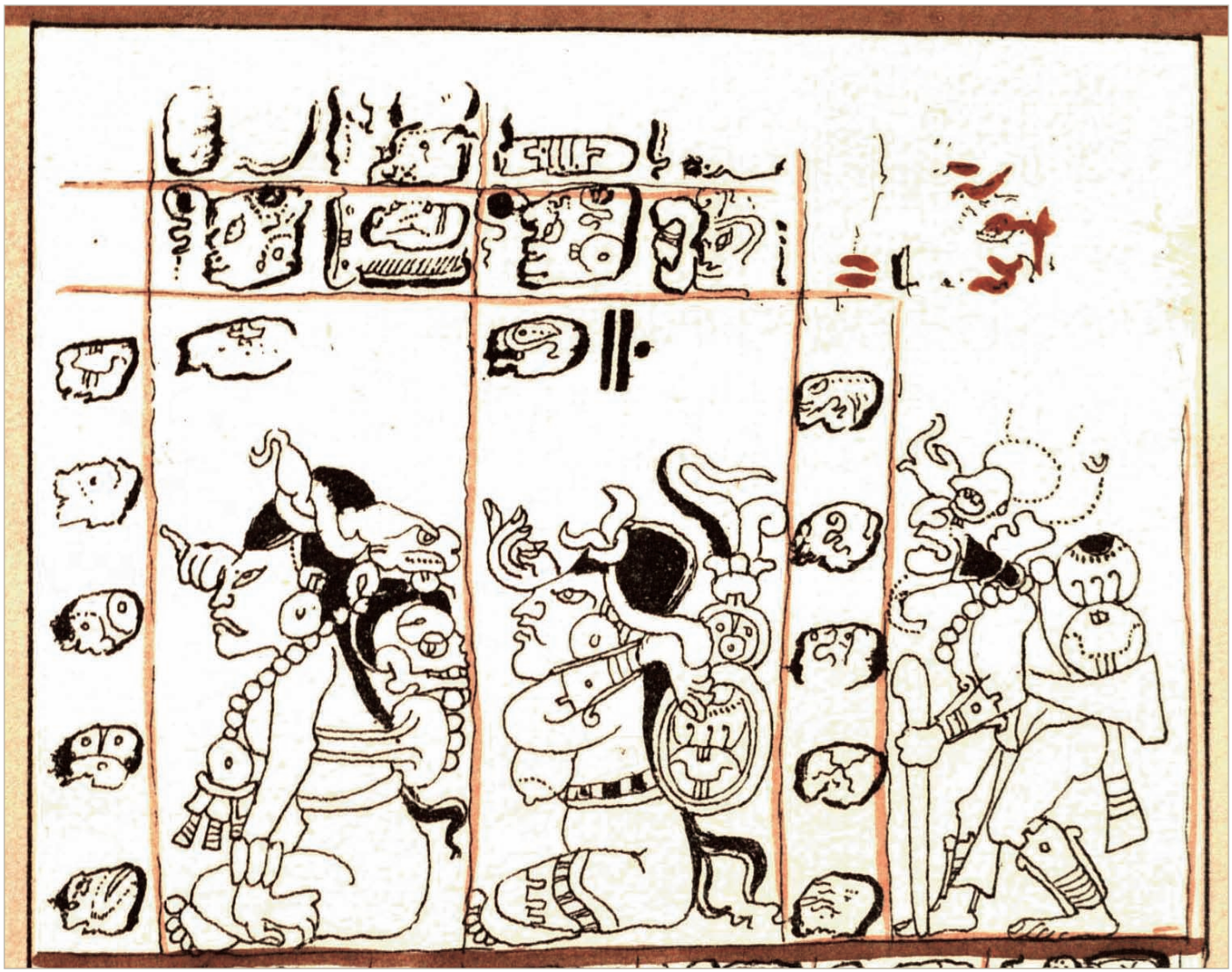

Figure 4. Page 16a of the *Dresden Codex* from the *Antiquities of Mexico*.

Munby 1956:11, 1967:122). Graham (1977:51) writes that there does appear to have been a disagreement between Aglio and Kingsborough, possibly over the matter of the copyright. Aglio may have considered he had claim to the volumes, as he had carried out many years of detailed work on the contents. This contention is supported by the fact that the contemporary journal review of the 1829 edition of the *Antiquities of Mexico* lists Aglio as the author (Foreign Quarterly Review 1832:90). It is apparent that Aglio was actually interviewed for this review. The article indicates that Aglio was extremely complimentary about his benefactor but mentions no comment on the fact that Aglio had been listed as the author and not Kingsborough (Foreign Quarterly Review 1832:90-91). However, it was really Kingsborough's lifelong passion and dedication to ancient Mexican scholarship that was the driving force behind the production of the remarkable volumes of the *Antiquities of Mexico*.

Importance of the *Antiquities of Mexico*

The *Antiquities of Mexico* continues to provide a valuable resource for the study of Mesoamerican archaeology, as some of the original manuscripts have deteriorated since Aglio's completion of the facsimiles. An example of this is the facsimile of the *Dresden Codex* which is included in Volume Three of the *Antiquities of Mexico* and remains an important resource. The codex was copied in 1892 by Ernst Förstemann using the new chromophotographic technique (Coe 1992:107). Yet it is obvious that some details of the codex shown in the Kingsborough version are no longer clearly visible in the Forstemann facsimile produced only sixty or seventy years later. One of the many examples is shown in Figures 4 and 5 where it is obvious

Figure 5. Page 16a of the *Dresden Codex* from Förstemann 1892.

that the Kingsborough version is the clearer of the two.

In addition to the earlier deterioration of the manuscript, the *Dresden Codex*, which is housed in the Dresden Library in Germany, sustained water damage as a result of the bombing of the city of Dresden during World War II. This further highlights the significance of the Kingsborough version.

Conclusion

It is unfortunate that Kingsborough's legacy is not fully recognized because of his apparent lack of attention to his own financial affairs combined with his neglect of self-promotion. Kingsborough's imprisonment and unfortunate death were probably caused by his attempt to obtain more money from the trustees of his father's estate, since lack of funding would have curtailed his passion for the collection and copying of ancient manuscripts. This passion most likely originated from the influence of Sir Thomas Phillipps. Although Kingsborough will not be remembered for having discovered the Lost Tribes of Israel, his achievement of the production of the *Antiquities of Mexico* will always remain a significant legacy for ancient Mesoamerican scholarship. These wonderful volumes have frequently been used as a prime reference source, particularly prior to the invention of fine color photographic reproduction techniques (Goodkind 1985:54). The facsimile of the *Dresden Codex* in particular, which is included in Volume Three of the work, will always remain a valuable source of information, particularly due to the deterioration of the original manuscript housed in the Dresden Library. It therefore seems unjust that there is no mention of Kingsborough's name on the title page of the 1830 edition. Even though

Kingsborough's name was included in the title page of the 1831 version, some libraries today, such as the British Library (Graham 1977:51) and the State Library of Victoria in Australia, have incorrectly catalogued Aglio as the author. Unfortunately, this situation tends to deprive Lord Kingsborough, who spent the majority of his lifetime on the creation of these volumes, of his rightful recognition.

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