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1. Mosaic glass panel. Egypt, ca. 1st century B.C.–1st century A.D., l. 3¼ in. (8.5 cm.), w. ¾ in. (1.5 cm.) *Gift of John Jermain Slocum. 1972.229.*

An Egyptian Mosaic Glass Panel

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Whether the ancient Egyptians were the first to develop glass is one of those perennial, academic questions leading to acrimonious debate rather than to the advancement of learning. But there is no question that their achievements in glass-making were early and outstanding. And the funerary customs of the Egyptians, favored by a dry and almost rainless climate, have preserved a splendid selection of these fragile things.

The ruins of a temple must have preserved and yielded the fine mosaic glass inlay presented to the Museum of Fine Arts in 1972 by John Jermain Slocum (fig. 1). Very little is recorded of its history, but it is known to have come from the antiquities collection of the late Levi de Benzion, a wealthy merchant with extensive holdings in Egypt, where for decades he spent his winters. During these sojourns he assembled a very large collection of Egyptian antiquities kept partly in his villa in Cairo and partly in a great chateau outside Paris. The mosaic glass given to the museum by Mr. Slocum remained in Cairo long after de Benzion's death during World War II.

As now assembled, the glass panel or inlay consists of seven separate pieces usually referred to in glass terminology as "slices." Six of them are duplicates, while the seventh and central panel is a different and less fine composition. The subject of the six panels is curious and certainly an infrequent one in mosaic glass. The sky-god Heh kneels on the hieroglyph for "gold," clasping in each hand the hieroglyphic sign for "year." This is in the form of a palm branch with, somewhat exceptionally, its leaves indicated. At the curved end of this branch, looking rather like a lantern, is the hieroglyph for "feast" or "festival." (It could also be read as *Sed*-festival.) Almost invisible at the very base of the year-sign is a tadpole, the Egyptian numeral for 100,000. Represented here, with these two year-signs on each slice, are at the very minimum 200,000 years of festivals (their length not specified). The god Heh himself is also a numeral in the ancient language, standing for one million, a rather impressive total. On the other hand, he was anything but a popular deity, rarely appearing in anything unconnected with accounts. Despite this god's obscurity, however, his identity as one million remains impressive. Whether the 200,000 years he grasps are to be added to the one million he represents or whether they are to be multiplied is not evident. But to grant this abundance of festivals was the magical purpose of this complex scene. To make sure that prosperity went along with this lavish stretch of time, Heh kneels on the hieroglyph for "gold," a detail seemingly included so that the recipient of all these years would be well maintained. In Egyptian, as in English, this word was also used in an adjectival sense, meaning "pleasant,"

“beneficent,” “golden,” and similar. Thus the gold-sign may indicate general well-being rather than wealth. Both are desirable.

Even the central panel containing the famous eye of the ancient falcon-god Horus could be construed as part of this arithmetical bender. This eye, perhaps the most frequent and revered of Egyptian amulets, was commonly used to ward off evil and invoke the protection of Horus, and, indeed, such may well have been the purpose of its presence here. But even this sacred eye had its arithmetical function, for it represented the curious fraction $63/64$. In the famous battle of Horus with his father's murderer, Seth, virtually the god of evil, the latter not only tore out Horus' eye but also wrenched it into sixty-four parts. The wise and gentle god Thoth assembled the parts but, alas, found only sixty-three of them. The missing sixty-fourth was supplied by his magic. Thus, the slice with the eye of Horus may really be invoking the aid of Thoth, a most powerful deity. It must be pointed out, in passing, that the section pendant immediately under the eye (a detail that stands for the fraction $1/64$) is misshapen, the sole defect in this splendid piece.

The recipient of this multitude of time, gold, and general good will was almost certainly a deity, although we have no clue to his identity. There is ample evidence that from at least about 500 B.C. and very probably earlier, the shrine housing the cult statue of a god (*naos*) was of wood elaborately decorated with faience and glass inlays. Although no complete wooden *naos* has come down to us, numerous individual panels from them have survived, and they allow us a very fair idea of the appearance of an intact shrine. Usually, the entire exterior wooden surface of a *naos* was covered with gold leaf, including those areas later to be inlaid. The central sections of the shrine invariably had scenes of a king worshipping the god or an episode from a myth. Above and below these compositions were multitudes of decorative and amuletic borders, rows of ankhs, or other traditional magical signs. It was from one of these minor registers that the Slocum inlay doubtless came. Probably there was a complete register of slices with the scene of Heh and his multitude of years. Indeed, it is possible that the register went entirely around the four sides of the shrine. The astronomical multiplication of years need not bother us, for in a very general sense the duplication was not intended to be taken too literally. In the museum's gallery we can gaze at this inlay with great appreciation and take pleasure in its fine details, but all these must have been lost when the slices were in their ancient location. The light in the sanctuary where the shrine stood was dim, and, in any case, the decorations were to be seen only by the deity himself and by the few priests privileged to attend him. These splendid glass mosaics were not intended for the vulgar gaze, and it is doubtful if even the priests could see much of them. Although they undoubtedly helped to provide a feeling of great richness and magnificent color, their decorative function was secondary. Their chief role was magical: to transfer to the god the blessings and good things portrayed on the walls of the *naos*.

The colors used in these mosaic slices are as noteworthy as the representations. The god's headdress and skirt, the sign for gold, and a few other details are a rich tomato red, a color almost never found in earlier Egyptian work. Though sparingly

used, it dominates the entire inlay and appears all the more brilliant by contrast with the light blue-green field on which it rests. An opaque white is used for several minor details. The yellow sun disks are flanked by red rectangles outlined in black. Black, in Egyptian art the sign of resurrection—the opposite of its symbolism in our civilization—is used for the god's flesh and some sections of the year-signs. In the central panel with the Horus eye, the colors are quite different. The eye proper is entirely conventional, being white and black, but its other parts are a light, almost a turquoise blue on a tomato red ground. The pendant section, already referred to as the fraction 1/64, is a curious cerise, such an odd color for an ancient Egyptian product that one immediately suspects a misfiring. The gold mounting in which the panel is now enclosed is of this century.

From present evidence it seems certain that mosaic glass was an Egyptian invention of very late date, belonging to the second period of glassmaking about the fourth century B.C. The earliest known dated example of mosaic glass is now in the Brooklyn Museum. Composed in simple geometric patterns, it is inlaid in a wooden panel, dating from the reign of Nectanebo II of about 360–340 B.C. The panel, which is accompanied by two figures of standing goddesses with outstretched wings, is clearly from a *naos*.¹

In the absence of excavation data it is not possible to give a specific date to the Slocum plaque, but its general place in the history of Egyptian art is well established. For decades it has been inferred that the peak of mosaic glass development came with the turn of the millennium, from about the first century B.C. to the following century. Confirmation of this supposition comes from the Museum of Fine Arts—Harvard University Expedition, which over a period from 1916 to 1923 excavated the royal pyramids of Kush (the present Sudan) under the direction of George A. Reisner. At Meroë (Begarawiyeh) near the Third Cataract, numerous mosaic glass slices, obviously Egyptian imports, were found in burials of various members of the royal family.² The majority of slices dated from the first half of the first century A.D. Among them was a fragment of a splendid Dionysiac head of a man, an involved and spirited composition now in the collection of the Boston Museum.³ It amply confirms the theory of the time at which the Egyptian mosaic glass industry reached its peak. The date of the burial where the slice was recovered is A.D. 25–41, but it is probable that the slice was of somewhat earlier date. It was found torn out of its original context and may well have come from a sumptuous piece of palace furniture in use for a generation or two before being assigned to the role of funerary furniture. Thus, the excavations in Kush give evidence that the date of the Slocum panel probably ranges from late in the first century B.C. to early in the following century.

If it is possible to establish a date for the appearance of mosaic glass on the Egyptian scene and for its highest development, it is less easy to offer specific information on the process of its manufacture. At present there are more unanswered questions than certain answers. In the simplest and earliest patterns of mosaic glass, say a checkerboard design consisting of squares of contrasting colors, the manufacturing process can be reconstructed with some certainty. Manufacturing rods, square in section and of any desired length, was a simple and elementary process of

molding in a terracotta mold. When these rods had cooled, they were removed from their molds, bunched together to form either a square or a rectangle in section, and then probably placed in a mold to be fused together in a solid mass. In turn this was fired and then allowed to cool. The resulting product, usually not longer than about eight inches, is called a cane. Glass is a flexible material, and the manipulation of the cane after its last firing well illustrates this point. The canes were cut into slices by the simple process of sawing, presumably with an iron saw. From a surviving, incompletely cut cane, we know that the desired slice was formed by sawing into the cane from opposite sides. The resulting slice was invariably thin, as it was to be used as an inlay. If patterns of great delicacy and fineness were desired, say ones with contrasting details only 1/32 inch square instead of 1/4 inch square, this could be easily achieved, given a skilled craftsman. The cane was again heated (or removed from the mold before cooling) but only to the point of being viscous or slightly flexible. It was then grasped at each end with pincers, drawn out to the desired fineness and allowed to cool. In this fashion fairly large, even coarse patterns were transformed into slices of striking delicacy.

Such was the process in making mosaic glass of the earliest and simplest type. In a very general way the same process can be transferred to the manufacture of the Slocum mosaic. Certainly, canes were made and sliced, but just how so complex and delicate a scene as this was formed, showing the god Heh and all his paraphernalia, is anything but clear. I suspect a complex system of molding must have been employed, but how these various molded elements were combined is not evident. Another problem in the involved patterns is how the firing was controlled. In general, each colored glass has its own flowing or melting point, and the variation of this temperature point between, let us say, yellow and turquoise-blue glass is very great. Somehow the brilliant glassmakers of Egypt controlled this variation to produce works of great complexity and beauty, of which this mosaic panel is undoubtedly one of the finest surviving examples.⁴

NOTES

1. Acc. nos. 37.258E-260E; h. 47 cm., 36 cm., 40.5 cm. See Elizabeth Riefstahl, *Ancient Egyptian Glass and Glazes in the Brooklyn Museum* (Brooklyn, 1968), nos. 69, 70. It is probable that the technique was invented at a slightly earlier date. However, the two alleged earlier examples cited in a review published in the *Journal of Egyptian Archaeology* 56 (1970), p. 218, do not contain mosaic glass.

2. Dows Dunham, *The Royal Cemeteries of Kush*, vol. 4: *Royal Tombs at Meroë and Barkal*

(Boston: Museum of Fine Arts, 1957), pp. 126-128.

3. *Ibid.*, p. 126, fig. 83 (49a).

4. For additional examples of fine mosaic panels from the same period, see Richard Ettinghausen, *Ancient Glass in the Freer Gallery of Art* (Washington, D.C.: Smithsonian Institution [1962]), pp. 18-19, figs. 33-54 (in color); Riefstahl, *Ancient Egyptian Glass*, pl. XII, nos. 84-85; John D. Cooney, *Catalogue of Egyptian Antiquities in the British Museum*, vol. IV: *Glass* (London, 1976), nos. 1628-1730 and pls. II, IV, V.