Fāṭimid Glass Jetons in Ismailia Museum collection (Unpublished)

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Abstract
This paper deals with five glass-Jetons on display in Ismailia Museum in Egypt,[1] dating back to the Fatimid period, I studied, examined, and photographed them after extracting all the required documents from the Museum administration and the Egyptian ministry of Tourism and Archaeology. The glass jetons were used in the Islamic era to calibrate the weights of money or coins, where each jeton was prepared to measure the weight of different currencies such as dinars and dirhams and their categories, there was a double dinar weight category, and the legitimate weight of the dinar was 4.25 grams and the weight of the dirham was 2.975 grams in order to ensure the safety of the weight and not to manipulate the currencies. Traders and sellers were receiving jetons from Dar Al-ʿAyyar, which is supervised by the al-Mūḥtasib or his deputy, where the official jeton is inspected and weighed, and the cones with wrong weights were destroyed, the jeton is a reflection of the economic situation and its weight is ensured because it is linked to commercial and financial transactions and the rights of the seller and buyer are preserved, sellers were punished for cheating the weights of the glass Jetons because of the resulting disruption of the economic system. The reason for making jetons from glass was due to its nature as it is not affected by moisture or dehydration, its weight remains unchanged since the official jeton was inspected. This contribution aims to discussing, analysing, and presenting the unpublished five Fāṭimid Glass Jetons from the collection of Ismailia Museum.

***Keywords*:** Fatimid, Glass jetons, Ismailia Museum.

Introduction
The Ismailia Museum is a regional museum in the Egyptian city of Ismailia. The museum was created by engineers working for the International Maritime Company (now the Suez Canal Authority) in 1911 AD. It was Egypt's first regional museum.
The museum was built in the shape of a temple pylon and houses a unique collection of antiques unearthed along the Suez Canal and in the Sinai Peninsula. Its construction accomplished on February 13th, 1934, AD, and it was opened to the public on March 4th of the same year. The museum houses various pieces from Egypt's history, beginning with the Pharaonic era and ending with Muhammad Ali Pasha's ascendancy.[2]
The collection of our study was found during excavations carried out in the city of aṭ-Ṭūr in Egypt. It's a group of five glass jetons used for measuring golden dīnārs and silver dirhams, dating to the Fāṭimid dynasty, depicted in deferent sizes and colours, giving a great example for such type of coinage glass weights. The collections of Islamic glass jetons is displayed in many museums in Egypt and all over the world like Gayer Anderson

Museum and The Museum of Islamic Art in Cairo, the Pergamon Museum in Berlin, the National University Library of Strasbourg, and the British Museum in London, Stamping was used to make glass jetons, which are commonly marked with Arabic scripts or figurative symbols. scripts have the name of the ruling caliph or *imām*, affirmations of Islamic religion, and Quran verses, as well as the mint date and town of manufacturing name, and, on rare occasions, the nominal worth of the coin.[3]

Map 1: Map of Egypt, with a highlight on the city of aṭ-Ṭūr[4]

The Fāṭimid Glass Jetons

The concern of weight adjusting in the Islamic world dates back to the birth of the state of Islam in Medina, prophet Mohamed- may God bless him and grant him peace - went in dealing with the weight "*wazn*" and measure "*kayl* or *mikyāl* " system, which were prevalent in Arab society, So he proceeded to establish the *Sharīʿa*, which forbids cheating in weights or measures, as it is prohibited to lose weight or mistaken the measures, in a statement prohibiting non-fulfilment of weight which is equivalent to the measure, and he said: "الوزنُ وزنُ أَهْلِ مَكَّةَ والمِكْيالُ مِكْيالُ أَهْلِ المدينةِ"

"A weight is the weight of the people of Makka, and a measure is the measure of the people of Medina".[5]

In the late eighteenth century, some European researchers though that the glass jetons were some sort of coin or currency, Castagiloni was the first to indicate that they were indeed coin weight in 1847 AD, but his research was mostly gnored.[6]In 1873, E. T. Rogers was the first to persuade the schoolers that the objects in question were weights for coinage. His proof came from the use of terms which refer to coins and weights such as *mithqāl*, *Wazn*, *dīnār*, and *dirham* on the earlier Umayyad and Abbasid glass jetons.[7]

Traditional Byzantine glass jetons were widely employed as monetary weights, especially among the Umayyad and Abbasid caliphs, as well as the Egyptian Tulunids and the North African Aglabid., passing by the Fāṭimid, Ayyubid till the mamluk caliphs.[8]

The Umayyad caliph ʻAbd al Malik bin Marawan (692-697 AD), was the first one to introduce Islamic coins in the Arab world.[9] When he accomplished the monetary reform in the year 77 AH, al-Damiri mentioned in his book *Ḥāīāt Ḥaīaūān* that ʻAbd al-Malik ordered castings glass jetons from vials that could not be increased or decreased to control the weights of money.[10]

Glass jetons or cymbals continued to be used in the Islamic era to calibrate the weights of coins, each jeton was prepared to measure the weight of different currencies such as dīnars and dirhams and their denominations, the legal weight of the dīnar was 4.25 grams, and the weight of the dirham was 2.975 grams, to ensure the safety of weight and not to manipulate currencies. A coin, particularly a high-value gold or silver coin, that is significantly underweight for whatever reason, and becomes invalid, loses its value as money, and being considered as bullion.[11]

The merchants and sellers used to obtain jetons from Dār *Al-ʿAyyar* which was responsible for the manufactur and regulation of weights under the supervision of *al-Mūḥtasib*[12] or his deputy, where the official jetons are inspected to approve their weights, and the jetons that do not match the weight are destroyed. The seller and the buyer shall be punished for cheating the weights of the jeton for the consequent disruption of the economic system.[13]

The government used to heir people to do weight control process these weighers were called (*al-wazzānūn*).[14] In the Fatimid era, the glass jetons was subjected to fraud, as *al-Musabbiḥī* mentioned that *Al-Mūḥtasib* punished a group of bakers because he found that their glass jetons with which they weighed the dirhams were excessive.[15]

Some researchers have claimed that the later Fāṭimid and Ayyūbid jetons were used as official fiduciary (token) currency from the late tenth until at least the thirteenth century, to act as a small change during a time when copper currency was non-existent and silver appeared to be scarce.[16] And It was confirmed that during the last ten years of Caliph al-'Aziz's reign, the Fāṭimid administration in Egypt began to employ glass jetons (sanajat) as fiduciary currency to replace the non-existent copper coinage..[17]

This hypothesis is supported by the fact that In Syria, where metal was plentiful, no glass tokens have ever been discovered. Most of the Fāṭimid tokens dates to the times of two caliphs, al-Ḥakīm bi-Amr Allāh (386–411 AH / 996–1021 AD) and al-Mustanṣir (427–87 AH/ 1036–94 AD), although a large number also come from the time of al-Zahir, al-Amir, and other caliphs.

The Fāṭimid jetons generally belongs to the dīnār-Dirham metrological system. Balog distinguishes three dīnār and five Dirham categories: double dīnār, 8.50 g; dīnār, 4.25 g, quarter dīnār, 1.12 g; double Dirham, 5.95; Dirham, 2.97; half-dirham, 1.44g; quarter Dirham, 0.66; eighth dirham 0.33g.[18]

The name of the ruling caliph or imam, affirmations of Islamic religion, and Quran verses are always engraved on one or both sides of the glass jetons, along with the coinage date and town name, and rarely the nominal value of the coin.[19]

Our Case study:

This collection of five Fāṭimid glass jetons comprises the names and titles off two Fāṭimid califs al-Ḥakīm bi-Amr Allāh and Al-Mustanṣir, that was discovered in 1989 AD during an archaeological excavation operation at the site of aṭ-Ṭūr in Saini,[20] this collection was dedicated to Ismailia Museum from Taba Great Museum[21], all of them bore Arabic inscriptions on one side written in floriated Kufic script.[22]

First Jeton, Plate 1:

Date of Object: Times of the Fāṭimid caliph al-Mustanṣir[23], (427-487 AH/ 1035-1094 AD)
Museum Inventory Number: 3192
Material(s) / Technique(s): Glass, moulded and stamped; transparent dark green in colour.
Dimensions: Diameter (in the range) 2.5 cm, weights 5.92 g.
Period / Dynasty: Fāṭimid dynasty
Provenance: aṭ-Ṭūr, Egypt

Description:

A double-Dirham category glass weight, this type of glass jetons was produced in Egypt between the (2nd -9th AH / 8th-15th AD) centuries, This specific sample is a spherical glass discs with a relief border, preserved in a good condition, pale-green in colour, with a stamped floriated Kufic Arabic inscription on one side, with the name and title of the caliph al-Mustanṣir, "the commander of the faithful", Transliterated "(Al-Imām Mu`id Abu Tamīm al-Mustanṣir bi-llāh ) (Amir al-Mu`minīn)" The front of the glass jeton is embossed, while the back is flat and plain.

The inscription on the frame Counter-clockwise circular reads:

"الإمام معد ... امير ... المستنصر بالله"

The inscription in the middle reads:

"Sic!"

Plate 1: Pale-green glass jeton with the name of caliph al-Mustanṣir
(Captured by the researcher)

Second Jeton, Plate 2:

Date of Object: Times of the Fāṭimid caliph al- Mustanṣir, (427-487 AH/ 1035-1094 AD)
Museum Inventory Number: 3194
Material(s) / Technique(s): Glass, moulded and stamped; in black colour.
Dimensions: Diameter (in the range) 3 cm, weights 9g.
Period / Dynasty: Fāṭimid dynasty
Provenance: aṭ-Ṭūr, Egypt

Description:
Double-Dirham category glass weight, depicted in black colour with two golden dots, This particular is a round glass discs, with a relief thickened border, found in a reasonable state of conservation, it has an impressed floriated Kufic Arabic script on one side, with the name and title of the caliph al-Mustanṣir, "the commander of the faithful", Transliterated "(Al-Imām Mu`id Abu Tamīm al-Mustanṣir bi-llāh Amir' 'al-Mu`minīn)" within an embossed frame, while the back is flat and plain.

The inscription on the frame counter-clockwise circular reads:

"الإمام معد أبو تميم المستنصر بالله امير..."

The inscription in the middle reads:

" ... المؤمنين"

Plate 2: Black glass jeton with the name of caliph al-Mustanṣir
(Captured by the researcher)

Third Jeton, Plate 3:
Date of Object: Times of the Fāṭimid caliph al-Ḥakīm bi-Amr Allāh,[24] (386-411AH/ 966-1021AD)
Museum Inventory Number: 3191
Material(s) / Technique(s): Glass, moulded and stamped; in a transparent olive-green colour.
Dimensions: Diameter (in the range) 2.6 cm, weights 4 g.
Period / Dynasty: Fāṭimid dynasty
Provenance: aṭ-Ṭūr, Egypt

Description:
Double-Dirham category glass weight, this jeton is a round glass discs, with a relief border, well preserved, olive-green in colour and it has an impressed Arabic floriated Kufic inscription depicted on one side, with the name and title of the caliph Ḥakīm, transliterated "(Ḥakīm bi-Amr Allāh)" within an embossed frame, while the back is flat and plain.

The inscription in the middle reads:
"الحاكم بأمر الله"

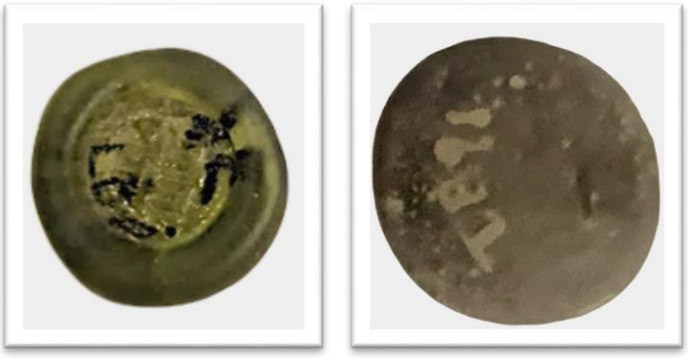

Plate 3: Black glass jeton with the name of caliph al-Ḥakīm
(Captured by the researcher)

Fourth Jeton, Plate 4:
Date of Object: Times of the Fāṭimid caliph al- Mustanṣir, (427-487 AH/ 1035-1094 AD)
Museum Inventory Number: 3190
Material(s) / Technique(s): Glass, moulded and stamped; in pale green colour.
Dimensions: Diameter (in the range) 3 cm, wweights 5.71g.
Period / Dynasty: Fāṭimid dynasty
Provenance: aṭ-Ṭūr, Egypt

Description:
Double-Dirham category, a pale green glass jeton, the edge is little bit broken, with impressed Kufic script on the frame bearing with the name and the title of the caliph al-

Mustanṣir, the commander of the faithful, transliterated "(Al-Imām Mu`id Abu Tamīm al-Mustanṣir bi-llāh' 'Amir al-Mu`minīn)", within an embossed frame, while the back is flat and plain.

The inscription on the frame Counter-clockwise circular reads:

"الإمام معد أبو تميم المستنصر بالله"

The inscription in the middle reads:

" ... امير المؤمنين"

Plate 4: Pale green glass jeton with the name of caliph al-Mustanṣir
(Captured by the researcher)

Fifth Jeton, Plate 5

Date of Object: Times of the Fāṭimid caliph al- Mustanṣir, (427-487 AH/ 1035-1094 AD)
Museum Inventory Number: 3193
Material(s) / Technique(s): Glass, moulded and stamped; in blue colour.
Dimensions: Diameter (in the range) 1.7 cm, weight 0.74 g.
Period / Dynasty: **Fāṭimid dynasty**
Provenance: aṭ-Ṭūr, Egypt

Description:

Eight dirham category, A dark blue opaque glass jeton, with a thickened frame and a Kufic impressed script on the middle of it depicted in two lined, The first line reads '*al-imām'* and the second '*Ma'add*', referring to the Caliph al-Mustansir, while the back is flat and plain.

The inscription in the middle depicted in two horizontal lines reads:

"الإمام"
"معد"

Plate 5: A blue glass jeton with the name of caliph al-Mustanṣir
(Captured by the researcher)

Conclusion:

- The glass jetons in our study were employed as reference weights in the manufacturing of gold and silver coins. In contrast, It is difficult to envisage of relationship between size or colour and mass, and later with monetary worth, let alone the prospect of attributing the manufacture of deeply coloured weights to a specific period.
- This collection of glass jetons proves that there was no single rule for the weight of money in the Fāṭimid era, although we don't have any published samples of the original coins to compare between them and the jetons.
- This study proves that the money denomination of double-dirham, dirham and half-dirham were used all over the Fāṭimid dynasty in Egypt
- All the inscriptions of the jetons under study came on obverse only depicted in a foliated Kufic script.
- Some of the jetons bear script on the frame and the center others are on the center only

End Note:

[1] The Museum collection contains another glass jetons, kept in its Wearhouse, the five ones under study are on display for visitors, in the showcase of the collection of Greco-Roman and Islamic coins.

[2] http://www.antiquities.gov.eg/DefaultAr/Museum/Pages/MuseumDetails.aspx?MusCode=18, Retrieved 11 September 2021.

[3] Launois, A., Estampilles et Poids Musulmans en Verre du Cabinet des Médailles, Cairo, 1959.

[4] http://www.alrahalah.com/wp-content/uploads/2010/02/GreaterCairoMap2011.jpg

[5] الكردي، محمد نجم الدين، المقادير الشرعية والاحكام الفقهية المتعلقة بها كيل-وزن- مقاس منذ عهد الرسول صلي الله عليه وسلم، ١٩٨٤، ص٤٥.

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[7] Bates, Michael L. The Function of Fāṭimid and Ayyūbid Glass Wėights, Journal of the Economic and Social History of the Orient, Vol. 24, No. 1 Brill, (Jan. 1981), p. 63.

[8] عثمان، محمد عبد الستار، صنج زجاجية عرفية لمثاقيل الدراهم من العصر العباسي المبكر في ضوء مجموعة متحف الفن الإسلامي: دراسة تحليلية، مجلة المسكوكات الإسلامية، العدد ١، ٢٠١٨، ص ١٨١.

[9] C. Lo Jacono, Storia del mondo islamico (VII-XVI secolo), in: Il vicino oriente, vol. I, Giulio Einaudi Editore, Torino, 2003.

[10] الدميري، كمال الدين. حياة الحيوان الكبرى، دار المعرفة، يناير ٢٠١٣، ص ١٢٥.

[11] Whitcomb, D., Ayla: Art and Industry in the Islamic Port of Aqaba, Chicago, 1994, pp.18–20.

[12] Al-muḥtasib (Arabic: محتسب, from the root حسبة ḥisbah, or "accountability") was "a holder of the office of al-hisbah in classical Islamic administrations", Also called ‘amil al-suq or sahib al-suq, the muḥtasib was a supervisor of bazaars and trade, the inspector of public places and behavior in towns in the medieval Islamic countries, appointed by the sultan, imam, or other political authority. His duty was to ensure that public business was conducted in accordance with the law of sharia;
"Muhtasib". Oxford Islamic Studies Online. Retrieved 2 September 2021

[13] Goodwin, T.(ed.), Coinage and History in the Seventh Century Near East 5. Proceedings of the 15th Seventh Century Syrian Numismatic Round Table held at Corpus Christi College, Oxford on 17th and 18th September 2016, London, Archetype, 2017, p. 175.

[14] Battie, D., and Cottle, S., (ed.), Sotheby's Concise Encyclopaedia of Glass, London, 1991.

[15] النبراوي، الصنج الزجاجية، ص١٦-١٧.

[16] Jenkins, M., Islamic Glass, A Brief History, New York, 1986;
داوود، مايسه محمود. المسكوكات الفاطمية بمجموعة متحف الفن الإسلامي بالقاهرة: دراسة اثرية وفنية، دار الفكر العربي، ١٩٩١، ص ٢٣٧.

[17] Balog, Paul. Fāṭimid Glass Jetons: Token Currency or Coin-Weights?, Journal of the Economic and Social History of the Orient, vol. 24, No. 1, Brill, (Jan 1981), pp. 93-109.

[18] Balog, the Fāṭimid glass jetons, p. 184, Table 1.

[19] Vaggelli, G. et. al, Islamic glass weights from Egypt: A systematic study by non-destructive μ-XRF technique, Journal of Non-Crystalline Solids, 363, 2013, p. 96.

[20] El Tor (Arabic: الطور aṭ-Ṭūr/et-Ṭūr Egyptian Arabic pronunciation: [etˈtˤuːr]), also Romanized as Aṭ-Ṭūr and At-Tur and known as Tur Sinai, formerly Raithu, is a small city and the capital of the South Sinai Governorate of Egypt. The name of the city comes from the Arabic term for the mountain where the prophet Moses received the Tablets of the Law from God; this mountain is designated Jabal Al Tor.
https://en.wikipedia.org/wiki/El_Tor,_Egypt, Retrieved 22 September 2021.

[21]The museum is in the city of Taba, it displays the history of Sini Peninsula from its inception during the era of the Pharaohs to its modern and contemporary history in an organised and engag ing manner through the article Film, which has made it one of Egypt's most prominent touristic si tes.
https://study-in-egypt.gov.eg/listing/327/The%20Great%20Taba%20Museum,Retrieved 23 September 2021

[22]Floriated Kufic is a writing style that began in Egypt in the late tenth century and extended thro ughout the Islamic world. This script was preferred for its beauty and complexity, combining the geometric character forms of the Kufic script with curvilinear floral decoration.
Lewis, B., (ed.), et. al. The Encyclopaedia of Islam, London, 1965.

[23] Abū Tamīm Ma'ad al-Mustanṣir bi-llāh (Arabic: أبو تميم معد المستنصر بالله), his reign was from June 13, 1036 (15th Shaban, 427 AH) to December 29, 1094/ January 6, 1095 (18th Zilhaja, 487 AH), was the eighth Fāṭimid Caliph.
ابن تغري بردي، يوسف. النجوم الزاهرة في ملوك مصر والقاهرة، وزارة الثقافة، مصر، ج٥، ٢٠١٦، ص١.
[24] Abū ʿAlī al-Manṣūr ,better known by his regnal name al-Ḥākim bi Amr Allāh (Arabic: الحاكم بأمر الله), was the sixth Fāṭimid caliph and 16th Ismaili Imam (996–1021 AD).
ابن تغري بردي، يوسف. النجوم الزاهرة، ج٤، ٢٠١٦، ص ١٧٦.

الصنج الزجاجية الفاطمية المحفوظة بمتحف الإسماعيلية (غير منشورة)

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الملخص العربي
يقع المتحف بمدينة الإسماعيلية المصرية، تم إنشاء المتحف من قبل المهندسين العاملين في الشركة البحرية الدولية (الآن هيئة قناة السويس) في عام 1911 م. كان أول متحف إقليمي يشيد في مصر. يتخذ بناء المتحف شكل صرح المعبد ويضم مجموعة من التحف الفريدة من نوعها المكتشفة على طول قناة السويس وفي شبه جزيرة سيناء. بدءا من العصر الفرعوني وحتى عهد محمد علي باشا. يعرض المتحف مجموعة من خمس صنج زجاجية ترجع للعصر الفاطمي في فترتي حكم الخليفة الحاكم بأمر الله والخليفة المستنصر بالله، غير منشورة من قبل، قمت بفحصها ودراستها وتصويرها بعد استخراج التصاريح اللازمة من إدارة المتحف ووزارة السياحة والاثار المصرية، والصنجة كلمة فارسية الأصل مشتقة من كلمة "سنكه" بمعنى الوزن أو العيار أو الثقل، كانت الصنج الزجاجية تستخدم في العصر الإسلامي للتأكد من سلامة أوزان النقود أو العملات المعدنية الفضية والذهبية، حيث كانت كل صنجة تستخدم لعيار وزن عملة مختلفة من الدنانير والدراهم وفئاتهم المختلفة، كانت هناك صنج تستخدم لوزن دينارين وكان الوزن الشرعي للدينار 4.25 جرام ووزن الدرهم 2.975 جرام وذلك للتأكد من سلامة الوزن من التلاعب او الغش.كان التجار والباعة يحصلون على الصنج من دار العيار، والتي يشرف عليها المحتسب أو نائبة، حيث يتم معاينة الصنج الرسمية واعتماد وزنها، ويتم اتلاف الصنج غير المطابقة للوزن، وتعد الصنج انعكاس للحالة الاقتصادية ويتم الحرص على سلامه اوزانها لارتباطها بالمعاملات التجارية والمالية للحفاظ على حقوق كلا من البائع والمشترى ومعاقبة من غش أوزان الصنج لما يترتب علي ذلك من خلل بالنظام المالي والاقتصادي .يرجع سبب صناعة الصنج من الزجاج لأنها لا تتأثر بالرطوبة أو الجفاف، فيظل الوزن ثابت لا يتغير حيث يتم معاينة الصنج الرسمية واعتماد وزنها وإتلاف الصنج الغير مطابقه للوزن.

الكلمات المفتاحية: العصر الفاطمي، الصنج الزجاجية، متحف الإسماعيلية.