



JIA2011

IV JORNADAS DE JOVENS
EM INVESTIGAÇÃO ARQUEOLÓGICA

11a13Maio

CAMPUS DE GAMBELAS
UNIVERSIDADE DO ALGARVE

Volume I

actas das IV Jornadas
de Jovens em Investigação Arqueológica

Actas das IV Jornadas de Jovens em Investigação Arqueológica - JIA 2011 Vol. I

(Faro, 11 a 14 de Maio de 2011)

Editores Científicos:
João Cascalheira
Célia Gonçalves

Núcleo de Arqueologia e Paleoecologia
Departamento de Artes e Humanidades
Faculdade de Ciências Humanas e Sociais
(Universidade do Algarve)



Universidade do Algarve
FACULDADE DE CIÊNCIAS HUMANAS E SOCIAIS
Departamento de Artes e Humanidades
Núcleo de Arqueologia e Paleoecologia

Promontoria Monográfica 16

Editor:

Núcleo de Arqueologia e Paleoecologia e
Departamento de Artes e Humanidades
Faculdade de Ciências Humanas e Sociais
Universidade do Algarve
Campus de Gambelas
8005-139 Faro
promontoria@ualg.pt

Coordenação Editorial:

Nuno Ferreira Bicho
António Faustino Carvalho

IMPRESSÃO:

Tipografia Tavirense, Lda.

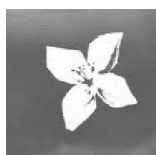
TIRAGEM:

280 exemplares

ISBN: 978-989-97666-2-4

Depósito Legal: 342265/12

APOIOS:



BPI



MULTICÓPIAS
CENTRO DE CÓPIAS



Silves
câmara municipal

Documentation of Viticulture and Winemaking in the Egyptian Tombs

Sofia Fonseca¹
Mahmoud Ibrahim²

Instituto Oriental da Faculdade de Ciências Sociais e Humanas da Universidade Nova de Lisboa
Avenida de Berna, 26-C, 1069-061 Lisboa, Portugal

¹fonseca.wineancientegypt@gmail.com

²ibrahim.wineancientegypt@gmail.com

ABSTRACT

The Complete Study of Viticulture and Oenology in the Egyptian Tombs project, *IREP EN KEMET, Wine of Ancient Egypt*, is a three-year scientific research project from the Universidade Nova de Lisboa, under the direction of Dr. Maria Rosa Guasch Jané, and funded by the Fundação para a Ciência e a Tecnologia (FCT) in Portugal. This project has three main objectives: to provide scholars with a complete, comprehensive archaeological and bibliographical database for the scenes of viticulture and winemaking depicted in the Egyptian tombs throughout the ancient Egyptian history, to analyse and interpret the collected data to lead to a better understanding of the different aspects of wine in ancient Egypt, and finally to demonstrate the high level of system and creativity of the ancient Egyptians in wine manufacture.

KEYWORDS

Ancient Egypt; Wine; Tomb scenes; Database

1. INTRODUCTION

Wine in ancient Egypt was a prestigious product mainly consumed by the upper classes and the royal family; it was offered in temples by the pharaohs and high priests as well as used in medicine. Since the Predynastic Period (4000-3100 BC), wine jars were placed in the Egyptian tombs as funerary offerings. During the New Kingdom (1539-1075 BC), wine jars were inscribed with details of the harvest including the year, the kind of product (*irp*, which is wine, or *shedeh*), the quality, the geographic origin, the property and the name of the winemaker. But do we know how the wine was made?

The research project presented here aims to document and analyse, for the first time, the complete corpus of viticulture and winemaking scenes depicted on the walls of the ancient Egyptian private tombs, being the most important data to study the production of wine. This project will develop a database in two different parts: a bibliographical database for all the bibliography (books, articles, etc) related to the subject of wine in ancient Egypt and another database listing all the Egyptian tombs having viticulture and winemaking scenes. The database will be accessible in the project's website. Moreover, the scenes of viticulture and winemaking of the Egyptian tombs will be listed and studied including the texts attached to these scenes. The different elements of the harvest works and wine production that are depicted in the tombs will be analysed, classified and then compared to traditional elaboration method of winemaking in the Mediterranean region, including Portugal, Spain and France.

2. DOCUMENTING WINE IN ANCIENT EGYPT

The oldest and most extensive documentation about the viticulture process and the manufacture of wine comes from ancient Egypt. The first evidence of the presence of grapes in Egypt is from the Predynastic (4000-3050 BC) settlements of Tell El-Farain (Buto) and Tell Ibrahim Awad; both are in the Nile Delta (Murray 2000: 577). Wine production itself is confirmed in Egypt since as early as the third millennium BC through the discovery of wine jars and stoppers in tombs also dating to the Predynastic Period. The first record of the word “irp” dates back to the 2nd Dynasty (2275-2650 BC) (Murray 2000: 577), while the first written reference to wine symbolism and ritual offering appears in the Pyramid Texts of King Unis at Saqqara (Allen 2005: 21), dating to the late 5th Dynasty (2450-2325 BC).

Viticulture and winemaking scenes were depicted on the walls of the private tombs from the Old Kingdom (2575-2150 BC) until the Graeco-Roman Period (332 BC-395), the scenes showing that the elaboration process was very similar to the traditional European method (Guasch-Jané 2008: 11). There are three main lists of tombs with viticulture and winemaking scenes from Lerstrup, Baum and Tallet, which we use as a base for our research. Lerstrup identified viticulture and winemaking scenes in 29 Old Kingdom tombs (see FIGURE 1), mainly located in Giza and Saqqara, in 8 Middle Kingdom tombs (see FIGURE 2), in 42 New Kingdom tombs at Western Thebes, in 3 Late Period (715-332 BC) tombs and in one Graeco-Roman tomb (Lerstrup 1992: 65; Murray 2000:

578). Baum documented 12 Old Kingdom tombs, 5 Middle Kingdom tombs, 38 New Kingdom tombs, 3 Late Period tombs and 3 Greco-Roman Period tombs (Baum 1988) and, finally, Tallet documented 34 Old Kingdom tombs with viticulture scenes, especially in Giza and Saqqara, but also from other sites in Faiyum and Middle-Egypt; 11 tombs from Middle Kingdom (6 from Beni-Hassan, 2 from El-Bersheh, 2 from Thebes and 1 from Aswan), 41 tombs from the New Kingdom (all from Thebes except for one from El-Kab and another one from the Oasis) and finally, 4 tombs from the Late Period (2 from Thebes, one fragment from Sais and one from Tuna El-Gabal) (Tallet 1998). The reliefs and paintings in the Egyptian tombs depict the different steps of viticulture and winemaking including grape harvesting, treading, pressing, fermentation, closing, stamping and labelling the jars and finally storing the wine jars in the cellar (Guasch-Jané 2008; Murray 2000: 152).

During the Dynastic Period (2950-332 BC), the main wine production sites were located in the Nile Delta, while during the New Kingdom (1539-1075 BC) wine was also produced in the Nile Valley and the Western Desert Oases.

Significant information sources on wine manufacture are the handwritten labels on the New Kingdom wine jars (amphora type, see FIGURE 3) found in various sites in Egypt, such as the capital city of El-Amarna (Leahy 1985: 65-109), as well as the Ramesseum temple (Koenig 1980: Pl 34) and Tutankhamun's tomb (KV 62) at Western Thebes (Cerny 1965: 1-4). The inscriptions indicated that the ancient Egyptians elaborated two kinds of products: *irp*, which is wine (Erman 1926: 115), and *shedeh*, which has no translation. A hypothesis established by Loret a hundred years ago suggested that *shedeh* could be a pomegranate wine (Loret 1892: 76-78) but, in the dictionary *Wörterbuch der Ägyptischen Sprache*, the *shedeh* was "a beverage akin to wine, sweet and strong" (Erman 1930: 568). According to the Papyrus Salt 825, the only text found so far that mentions the elaboration of the *shedeh*, it was filtered and heated; however, due to a damage in the papyrus the botanical source of the *shedeh* remained unknown (Derchain 1965: 137, 147-149; Guasch-Jané 2008: 29-30; Tallet 1995: 460-64). Tallet suggested that it might be a grape wine with a different elaboration, possibly depicted in the tomb of Baqet (no. 15) at Beni Hassan (Tallet 1995: 485-89, 492 fig.6). Chemical analysis were carried out to a sample from a *shedeh* amphora, found at the burial chamber of Tutankhamun's tomb (KV 62) in the Valley of Kings in Western Thebes, using the method for archaeological residues of wine by LC-MS/MS technique (Guasch-Jané *et al.* 2004), proved that *shedeh* was made from grapes (Guasch-Jané *et al.* 2006a: 101).

Like modern wine labels, the inscriptions on the New Kingdom wine jars give us information about the wine production: the year, the quality and sweetness, the kind of product (*irp* or *shedeh*), the geographic origin, the estate and the name and title of the winemaker (Guasch-Jané 2010: 63). What the inscriptions never mentioned is the colour of the wine. Egyptian wine symbolism was based on its red colour, not only because of the relation

established between wine and the blood of Osiris, the god of the afterlife, the underworld and the dead, but also because of the reddish colour of the River Nile during the flood¹, when the harvest time for grapes starts (Poo 1986, 1995). In the papyrus of the royal scribe Nakht (TT 52), a vine is leading to the nose of Osiris as a symbol of resurrection. The ancient Egyptians considered both the grapes and wine symbols of resurrection, an idea still existing in Christianity today.

But, what types of wine were made? Did Egyptians produce red wine only?

In order to study the colour of the Egyptian wines, an analytical method for archaeological residues of wine was developed, using the LC-MS/MS technique (Guasch-Jané 2008; Guasch-Jané *et al.* 2004). Samples of residues found in Tutankhamun's amphorae at the Egyptian Museum in Cairo were studied (Guasch-Jané 2008: 35-8) and two compounds were identified: tartaric acid as a grape marker and syringic acid, derived from malvidin (the main compound responsible for the red colour of grapes and wines), as a red grape marker (Guasch-Jané *et al.* 2004: 1675-1676).

The results revealed that the sample from Tutankhamun's amphora (JE 62314, Carter no. 195)² inscribed "Year 9, Wine of the Estate of Aten of the Western River, Chief Vintner Khaa" was a red wine (Guasch-Jané 2008: 56-7, sample EM5; Guasch-Jané *et al.* 2006b: 1077-78;) and that the sample from Tutankhamun's amphora (JE 62316, Carter no. 180) inscribed "Year 5, Wine of the Estate of Tutankhamun, Ruler of Thebes in the Western River, Chief Vintner Khaa" was a white wine, as tartaric acid but no syringic acid was identified (Guasch-Jané 2008: 56, 59, sample EM4; Guasch-Jané *et al.* 2006b: 1077). The results also revealed that the sample from Tutankhamun's amphora (JE 62315, Carter no. 206) bearing the inscription "Year 5, *Shedeh* of very good quality of the Estate of Aten of the Western River, Chief Vintner Rer" contained a red grape wine (Guasch-Jané 2008: 53-4; Guasch-Jané *et al.* 2006a: 100-101). The results revealed that three kinds of wine were produced in ancient Egypt: red wine, white wine and *shedeh*, a more elaborated red grape wine.

In recent research, the three kinds of wine surrounding the mummified body in Tutankhamun's burial chamber, the red wine to the west, the *shedeh* to the south and the white wine to the east, are believed to be for the three steps in Tutankhamun's transfiguration to rebirth (Guasch-Jané 2011).

3. METHODOLOGY

To achieve our objectives we have elaborated a research methodology that consists of three main steps:

- 1) The establishment of a complete bibliographic database with all the books, articles, websites and

¹ The ferruginous alluvium coming from the Ethiopian mountains gave a reddish hue to the Nile water during the flood.

² Carter Archive: Tutankhamun: anatomy of an excavation. The Howard Carter Archives. Available at <http://www.griffith.ox.ac.uk/gri/carter/> (accessed 5 August 2011).

on-line articles as well as existing databases related to wine, viticulture and winemaking in ancient Egypt. The data in the bibliographic database will be recorded in Excel Sheet and presented by Filemaker Pro11 software. These data will include the following items about each reference: serial number, type of article/book, authors, title, website, online link, periodical/journal/ encyclopaedia/ dictionary, edition, editors, pages, plates/ plans, publisher, place of publication, year of publication, author abbreviation and remarks (see FIGURE 4).

- 2) The documentation of all the scenes or part of scenes related to viticulture and winemaking in ancient Egyptian tombs, including all the archaeological sites throughout the ancient Egyptian history. Once we have all the viticulture and winemaking scenes identified, we will study the scenes themselves and classify them, considering the period to which they belong and the owner of the tomb. For this stage we will consult the Porter and Moss³ collection and the Egypt Exploration Society publications entitled "Archaeological Survey of Egypt, Memoirs" and other relevant publications. The data in the scene database will be recorded in Excel Sheet and presented by Filemaker Pro11 software. These data will include the following items about each scene: record number; scene description which include theme, details, annotations, text, hieroglyphic, transliteration and translation, image/photo; dating which include the period, dynasties and kings; location with provenance, governorate, archaeological site, tomb number/ name and the location inside the tomb; present provenance if it's a museum, the location inside the museum and the inventory number, and others if it's not a museum, and finally the tomb information such as the type of tomb, the tomb owner, as well as the name and titles associated to the owner.
- 3) Finally the study and analysis of all the recorded scenes based on four main aspects:
 - a) the wine elaboration process, including the classification of scenes and identification of any representation of the three types of wines (white, red and *shedeh*). It has been suggested that a Middle Kingdom tomb from Deir El-Bersheh may show the production of white wine, since the pressing scene directly follows the harvesting scene where greenish-coloured grapes are picked (Montet 1913: 117-18; Murray 2000: 591). There is also a unique reference from the tomb of Baqet III in Beni Hassan suggested

by Tallet as representation of the elaboration of *shedeh* (Tallet 1995: 485, 492 Fig.6)⁴.

- b) the complete viticultural tasks and winemaking process as depicted in the scenes. The steps represented in the scenes are: watering the vine, grape harvest, transport of the grapes in baskets to the press, pressing the grapes, a sack press, filling the jars, fermentation (including the refrigeration of the jars), wine tasting, sealing and labelling the wine jars, as well as counting the grape baskets and the wine jars, transportation of the wine jars to the cellar, and the wine jars stored in the cellar. Moreover our team aims to investigate if there are any other scenes representing these steps that had yet not been identified. Hopefully, this research will bring even more information about the complete process of winemaking by the ancient Egyptians.
- c) the complete study of the hieroglyphic texts accompanying the scenes, including categorization, translation and commentary. This relation between images and text has never been made, thus the study of these inscriptions will provide scholars with new important information about the elaboration of wine in ancient Egypt.
- d) finally, the study of the titles of the tombs' owners, whose tombs include viticulture and winemaking scenes, to know the different specific titles related with wine production.

4. PROJECT RESULTS AND CONCLUSION

The final and main result of the IREP EN KEMET (Wine of ancient Egypt) project is to publish on-line an electronic comprehensive and researchable database of the viticulture and winemaking scenes in Egyptian tombs, considering their location, their archaeological site, their period as well as the titles of the tombs' owners. The database will be available for consultation of Egyptologists, students or the public interested in this subject. The project will also publish a book to include the complete corpus of tombs with viticulture and winemaking scenes together with the results of the research project. With this two corpus of information we plan to produce a complete study and a comprehensive database for viticulture and winemaking in ancient Egypt.

ACKNOWLEDGEMENTS

This work has financial support from the National Funds through FCT – Fundação para a Ciência e a Tecnologia in the framework of the project «PTDC/HIS-ARQ/112562/2009».

³ The *Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, Statues, Reliefs and Paintings* is a complete catalogue of Egyptian tombs started by Bertha Porter in the last decade of the 19th century and continued by Rosalind L.B. Moss the next 50 years. It is now edited by Jaromir Malek from the Griffith Institute in Oxford (UK) and is considered by Lesko as "one of the most important research tools for Egyptologists and archaeologists." (http://www.brown.edu/Research/Breaking_Ground/bios/Porter_Bertha.pdf)

⁴ Tomb n.15 of Baket III, a Middle Kingdom tomb (1975-1640 BC) from Beni Hassan.

REFERENCES

- ALLEN, J.P.
2005. *The Ancient Egyptian Pyramid Texts. Writings from the Ancient World*. Atlanta: Society of Biblical Literature, 23.
- BAUM, N.
1988. Arbres et Arbustres de l'Egypte Ancienne. *Orientalia Lovaniensia Analecta* 31: 135-148.
- BLACKMAN, A.M. & M.R. APTED
1953. *The rock tombs of Meir, volume V. Archaeological Survey of Egypt. 28th Memoir*. London: Egypt Exploration Society.
- CERNY, J.
1965. Chapter I. Wine jars, in J. Baines (ed.) *Hieratic Inscriptions from the Tomb of Tutankhamun. Tutankhamun's Tomb Series II: 1-4*. Oxford: Griffith Institute.
- DERCHAIN, P.
1965. *Le papyrus Salt 825 (B.M. 10051): Rituel pour la Conservation de la Vie en Égypte. Mémoires LVIII: 137 (II, 1), 147-149 (n. 10)*. Bruxelles: Académie Royale de Belgique.
- ERMAN, A & H. GRAPOW.
1926-1931. *Wörterbuch der ägyptischen Sprache*, 5 vol: 115, 568. Leipzig: Akademie Verlag.
- GUASCH-JANÉ, M.R.
2011. The meaning of wine in Egyptian tombs: the three amphorae in Tutankhamun's burial chamber. *Antiquity* 85 (329): 851-858.
2010. On Egyptian wine marketing, in A. Hudecz & M. Petrik (ed.) *Commerce and Economy in Ancient Egypt. Proceedings of the Third International Congress for Young Egyptologists 25-27 September 2009, Budapest* (British Archaeological Reports International Series 2131): 63-69. Oxford: Archaeopress.
2008. *Wine in Ancient Egypt: a Cultural and Analytical Study* (British Archaeological Reports International Series 1851). Oxford: Archaeopress.
- GUASCH-JANÉ M.R., C. ANDRÉS-LACUEVA, O. JÁUREGUI & R.M. LAMUELA-RAVENTÓS
2006a. The origin of the ancient Egyptian drink Shedeh revealed using LC/MS/MS, *Journal of Archaeological Science* 33: 98-101.
2006b. First evidence of white wine in ancient Egypt from Tutankhamun's tomb. *Journal of Archaeological Science* 33: 1075-1080.
- GUASCH-JANÉ, M.R., M. IBERN-GÓMEZ, C. ANDRÉS-LACUEVA, O. JÁUREGUI & R.M. LAMUELA-RAVENTÓS
2004. Liquid chromatography mass spectrometry in tandem mode applied for the identification of wine markers in residues from ancient Egyptian vessels. *Analytical Chemistry* 76: 1672-1677.
- KOENIG, Y.
1980. *Catalogue des étiquettes de jarres hiératiques de Deir El-Médineh 2, Nr. 6242-6497*. Documents de Fouilles de l'Institut Français d'Archéologie Orientale 21. Cairo.
- LEAHY, M.A.
1985. "The hieratic labels", *Amarna Reports, II. Occasional Publications*. London: Egypt Exploration Society.
- LERSTRUP, A.
1992. The making of wine in Egypt. *Göttinger Miszellen* 129: 61-82.
- MONTET, P.
1913. La fabrication du vin dans les tombeaux antérieurs au Nouvel Empire. *Recueil de Travaux Relatifs à la Philologie et à l'Archéologie égyptiennes et assyriennes (RecTrav)* 35: 117-124.
- MURRAY, A.M., N. BOULTON & C. HERON
2000. Viticulture and wine production, in P.T. Nicholson & I. Shaw (ed.) *Ancient Egypt Materials and Technology*: 577- 608. Cambridge: Cambridge University Press.
- NEWBERRY, P.E.
1893. *Beni Hassan, part I. Archaeological Survey of Egypt*. London: Egypt Exploration Fund.
- LORET, V.
1892. *La flore pharaonique*. Paris: Ernest Leroux.
- POO, M-CH.
1995. *Wine and wine offering in the religion of ancient Egypt*. London: Kegan Paul International.
1986. "Weinopfer" in *Lexikon der Ägyptologie VI*: 1186-1190. Wiesbaden: Harrassowitz.
- TALLET, P.
1998. Le vin en Égypte à l'époque faraonique. Unpublished PhD. Université de Paris-Sorbonne. Paris.
1995. Le shedeh: étude d'un procédé de vinification en Égypte ancienne. *Bulletin de l'Institut Français d'Archéologie Orientale* 95: 459-492.



FIGURE 1. Harvest and winemaking scene from the tomb of Pepiankh in Meir, 6th Dynasty, Old Kingdom (Blackman & Apted 1893: Pl. XX). The upper part shows a pergola vine on the left-hand side and three men treading grapes on the right. Below, on the left-hand side another group of men is using a sack press. To the right, a man is pouring the must in big containers for fermentation. Courtesy of the Egypt Exploration Society, London.

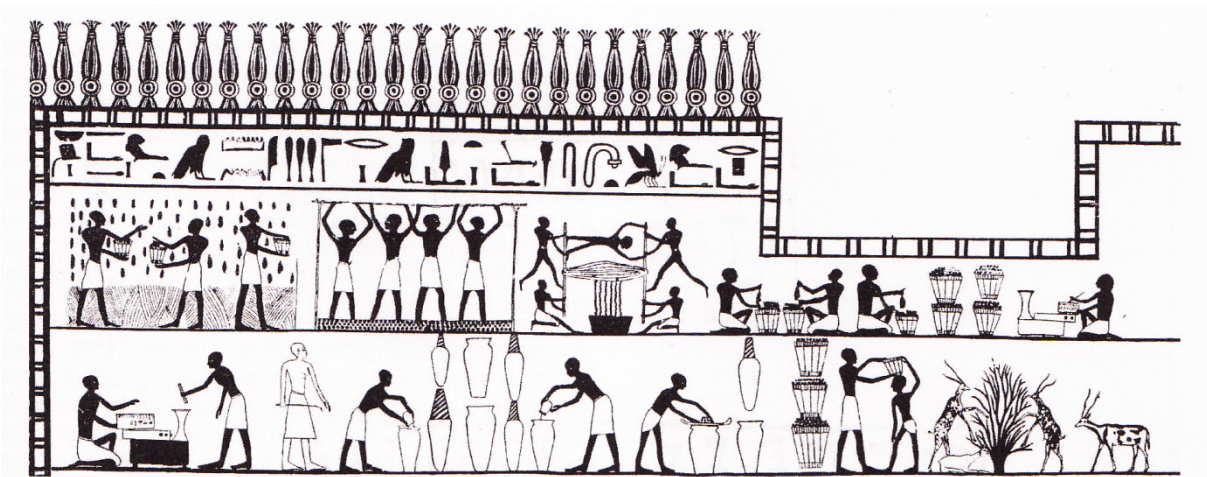


FIGURE 2. Harvest and winemaking scene from the tomb of Amenemhat (no. 2) in Beni Hassan, 12th Dynasty, Middle Kingdom (Newberry, 1893: Pl. XII). Upper part: grapes are gathered, pressed in a vat and further pressed in a sack press. Beside, grape baskets are being counted and a scribe records the total amount. Lower part: amphorae are filled up and sealed while a supervisor controls it. On the right-hand side, goats are grazing the vineyard. Courtesy of the Egypt Exploration Society, London.



FIGURE 3. Wine jar (JE 62303, Carter no. 486) found at the Annexe chamber of Tutankhamun's tomb (KV 62) at Western Thebes, now displayed at the Egyptian Museum in Cairo, Egypt. The inscription reads: "Year 4, Wine from the Estate of Aten, in the Western River, Chief Vintner Nen". The clay seal is broken and it is open on the upper part. Copyright: Maria Rosa Guasch Jané, with permission of the Egyptian Museum in Cairo.

COMPLETE STUDY OF VITICULTURE AND OENOLOGY IN EGYPTIAN TOMBS	
BIBLIOGRAPHY database	
SERIAL	0034
TYPE	Article
AUTHORS	M. R. Guasch-Jané, et al.
TITLE	The origin of the ancient Egyptian drink Shedeh revealed using LC/MS/MS
WEBSITE	
ONLINE LINK	
PERIODICAL / JOURNAL / ENCYCLOPEDIA / DICTIONARY	Journal of Archaeological Science 33/8
EDITION	
EDITORS	
PAGES	98-101
PLATES / PLANS	Ill., graph. Darst.
PUBLISHER	Elsevier
PLACE OF PUBLICATION	London
YEAR OF PUBLICATION	2006
ABBREVIATION	Guasch, 2006
REMARKS	AIGYPTOS Literaturdatenbank; Sofia, 27-05-2011

FIGURE 4. Layout of the bibliographic database presented in Filemaker Pro11 software, with the following items about each reference: serial number, type of article/book, authors, title, website, online link, periodical/ journal/ encyclopaedia/ dictionary, edition, editors, pages, plates/ plans, publisher, place of publication, year of publication, author abbreviation and remarks.