

Pioneers of aerial archaeology: the *Bayerische Fliegerstaffel* in Palestine (1917-1918)

Roland Linck ^{1,2*}

1 Bavarian State Department for Monuments and Sites (BLfD), Munich, Germany

2 Ludwig-Maximilians-University, Department of Earth and Environmental Sciences, Munich, Germany

* Corresponding author: E-mail: roland.linck@blfd.bayern.de

Abstract

Bavarian military pilots were among the pioneers of aerial archaeology. The “Fliegerstaffel” documented a huge amount of archaeological sites especially in Palestine. Many of these sites nowadays are destroyed or not visible in its original shape anymore.

Keywords

aerial archaeology; Baalbek; Fliegerstaffel; Jordan; Middle East

Introduction

The history of aerial archaeology started in the second half of the 19th century, when first attempts were made by Franz Stolze to document his excavations on Persepolis (Iran) (Stolze 1882), or 1898/99 at the Foro Romano in Rome (Musson et al. 2013). Whereas these first surveys mostly were executed with balloons, the method advanced a huge step forward by the development of the first airplanes at the beginning of the 20th century.

First famous aerial archaeological findings in the Middle East are documented by Père Antoine Poidepard in the 1930s (Poidepard 1934). However, it is still quite unknown that already some decades earlier, during the First World War, several important sites were mapped from a bird’s-eye perspective. A pioneering role played the *Bayerische Fliegerstaffel* that was sent to Palestine in 1917 to support the Turkish army in defending the Ottoman Empire from the British. The Ottoman Empire comprised, beside the modern Turkey, also Syria, Lebanon, Iraq, Jordan and Palestine (archivportal-d.de). Apart from their original task of generating military reconnaissance images, the Bavarian pilots also documented a multitude of archaeological sites in this area. The “Fliegerstaffel 304” was equipped with biplanes Albatros D.III and AEG C.IV (Fig. 1) (Dalman 1925). These airplanes offered a second seat for a pilot observer that acquired the lantern slide negatives. Af-

ter the war, these photos were transferred to the Bavarian War Archive in Munich that still today stores nearly 3000 of them (archivportal-d.de).

Case studies

Baalbek (Lebanon)

Today, Baalbek is a provincial capital and is located in the 900-1500 m high Beqaa-Plain in the Eastern part of the Lebanon (van Ess and Rheidt 2014). Since 1984, the ancient ruins of Baalbek have been declared an UNESCO World Heritage Site. The Bavarian military pilots documented the area of the Jupiter temple, the most famous monument in Baalbek, from the air (Fig. 2). The Jupiter temple has a length of 270 m, and hence belongs to the largest ancient temples; already the smaller Bacchus temple (Fig. 2, upper part) is bigger than the Athena temple on the Acropolis in Athens (Greece).

The first systematic archaeological excavations started during the French Protectorate in the 1920s. Since this time, the archaeological surveys concentrated on the ancient remains of Baalbek and traces of younger building phases, like a Byzantine basilica and an Arab fortress have been largely removed (van Ess and Rheidt 2014). As the



Fig. 1: Biplane AEG C.IV of the *Bayerische Fliegerstaffel* at the airport Afule (former Palestine) in 1917/18 (© Bayerisches Hauptstaatsarchiv, BayHStA, BS Pal. 1256/a).

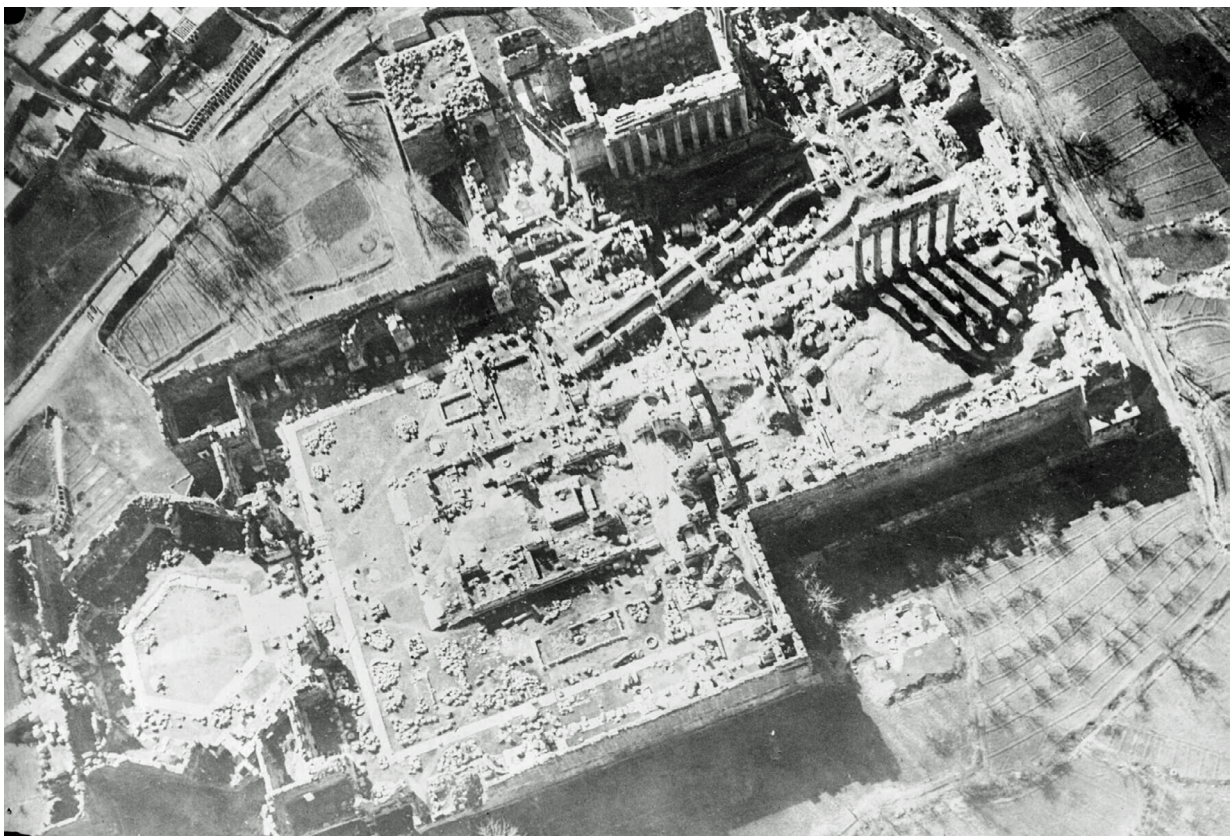


Fig. 2: Aerial view of the ruins of the Jupiter and Bacchus temple in Baalbek (Lebanon) from the north. As the photo was acquired in 1917/18, several now removed walls are still visible (© Bayerisches Hauptstaatsarchiv, BayHStA, BS Pal. 512).



Fig. 3: (a) Aerial view of the desert fortress Qasr Mschatta (Jordan) from the northeast. The photo was taken on 09.04.1918 and shows the ruins located in the desert (© Bayerisches Hauptstaatsarchiv, BayHStA, BS Pat. 1224). (b) Modern satellite image showing that the character is lost due to the location inside the international airport area (© Microsoft, Bing Aerial 2022).


aerial photo of the “Fliegerstaffel” dates earlier, all these structures can be easily detected and mapped. Therefore, these images depict an important source for reconstructing, how the Jupiter temple in Baalbek looked like after Roman times. Especially in the Great court (Fig. 2, center) sev-

eral demolished walls of the basilica and a huge stone-built water channel can be clearly identified. Of course, all the important parts of the ruin like the very well preserved Bacchus temple, the surrounding walls of the Jupiter temple as well as the entrance stairs and the octagon also are visible.

Qasr Mschatta (Jordan)

The Umayyad desert fortress Qasr Mschatta is located ca. 30 km south of Amman, the modern capital of Jordan. It was erected in the 9th century and belongs to a chain of more than 30 similar desert fortresses in Jordan, Iraq and Saudi Arabia. Already some decades after its construction it was abandoned again after an earthquake (smb.museum). The aerial photo in Figure 3a impressively shows the layout of Qasr Mschatta and its quadratic outline with 144 m length as well as the ruins of the 25 watchtowers along the outer wall. Additionally, in the interior, the remains of the former buildings like the palace still can be detected. In 1918, the original location in the middle of the desert, far away from any modern settlement was preserved, in contrary to today, when Qasr Mschatta is located inside of the Queen Alia International Airport and therefore is endangered to be completely demolished by future construction work related with the development of the airport (Fig. 3b). Furthermore, the original desert character is lost and the old aerial photography again provides an important historical source.

Conclusion

As the two exemplary case studies show, the military pilots of the *Bayerische Fliegerstaffel* can be regarded as aerial archaeology pioneers documenting several important sites in the Near East. During the First World War, this method still was in the fledgling stages and the biggest developments in the discipline started some decades later. The still preserved lantern slides of the archaeological sites in Palestine depict a real treasure, as many of these sites nowadays are destroyed by erosion, construction work, looting and military conflicts or are altered by growing settlements in the surrounding and extensive excavation campaigns in the meantime. The *Bayerische Fliegerstaffel* documented several further important archaeological sites in the Near East, like e.g. Damascus (Syria), the ancient ruins of Dscherasch (Jordan) or Milet (Turkey), the medieval Arab fortress Adschlun-Kalat er-Rabad (Jordan) and even the Pyramids of Gizeh (Egypt). 

References

- archivportal-d.de [Internet]. c2022 [cited 2022 Aug 5]. Available from: <https://www.archivportal-d.de/item/5CIYHBPGBD2W7IC-MOBTUCZ46SXWR6OUS>
- Dalman DG. Hundert Deutsche Fliegerbilder aus Palaestina. C. Bertelsmann, Gütersloh; 1925. German.
- Musson C, Palmer R, Campana S. Flights into the Past: Aerial photography, photo interpretation and mapping for archaeology. Occasional Publication No. 4 of the Aerial Archaeology Research Group; 2013.
- Poidepard A. La Trace de Rome dans le Désert de Syrie. Librairie Orientaliste Paul Geuthner, Paris; 1934. French.
- smb.museum [Internet]. c2022 [cited 2022 Aug 5]. Available from: <https://www.smb.museum/museen-einrichtungen/museum-fuer-islamische-kunst/sammeln-forschen/forschung-kooperation/qasr-al-mschatta-das-fruehislamische-wuestenschloss-mschatta-jordanien-dokumentation-und-deutung/>
- Stolze F. Persepolis, die achaemenidischen und sasanidischen Denkmäler und Inschriften von Persepolis, Istakhr, Pasargadae, Shâpûr. Berlin; 1882. German.
- Van Ess M, Rheidt K. Baalbek – Heliopolis: 10 000 Jahre Stadtgeschichte. Verlag Philipp von Zabern, Darmstadt; 2014. German.

Open Access

This paper is published under the Creative Commons Attribution 4.0 International license (<https://creativecommons.org/licenses/by/4.0/deed.en>). Please note that individual, appropriately marked parts of the paper may be excluded from the license mentioned or may be subject to other copyright conditions. If such third party material is not under the Creative Commons license, any copying, editing or public reproduction is only permitted with the prior consent of the respective copyright owner or on the basis of relevant legal authorization regulations.