



Short communication

A rediscovered-new 'Qanat' system in the High Mountains of Sinai Peninsula, with Levantine reflections



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ARTICLE INFO

Article history:

Received 11 April 2014

Received in revised form

15 June 2014

Accepted 26 June 2014

Available online 15 July 2014

Keywords:

Foggara

Irrigation

Levant

Qanat

Sinai Peninsula

ABSTRACT

Since the Achaemenid Empire in 532–332 BCE, the 'Qanat' became the central irrigation system in the arid and semi-arid lands. Several terms are used for 'Qanat' in different regions, including the Karez, Qanat, Falaj type Daudi, Qanat Romani, Fuqara (Foggara), or Khettara as known in Central Asia, Persia, Southeast Arabia, Levant, North Africa, or Morocco respectively. Typically, the ground, spring or surface water (i.e. seasonal floods or river-fed) sources feed similar irrigation system. Based on thirteen years of extensive survey and analysis work (i.e. Sinai Peninsula Research 2000–2013 CE), this paper presents a rediscovered-new Qanat system in the High Mountains of Sinai Peninsula (i.e. UNESCO World Heritage Site 'WHS' no. 954) under chronological open question with Levantine reflections. In 1970s CE, the present Sinaitic site of Farsh Abu A'lwan or the anciently known Farsh Shamma'a was archaeologically surveyed without a direct reference to the Qanat system in-situ. Scientifically, it is an argumentative and unique Qanat system in terms of chronology, location (region), site (local-setting), water source, size and household utility. It is the only discovered 'Qanat' across the Sinai, connecting the Near East and North Africa.

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1. Introduction

In the 1970s CE, extensive archaeological surveys were conducted in the High Mountains of Sinai Peninsula by Uzi Dahari and Israel Finkelstein to study the Byzantine monastic settlements (Dahari, 2000; Finkelstein and Ovadiah, 1985). Further archaeological surveys were conducted by Itzhaq Beit-Arieh to study the pre-historic sites of the entire South Sinai, including the perimeter and the inner northern plains of the mountain range (Beit-Arieh, 2003). On 9th–13th March 2009, Sinai Peninsula Research 2000–2013 CE, a private survey and documentation research initiative via a series of seventeen expeditions in the High Mountains of Sinai Peninsula (i.e. phase I '2000–2008': survey and documentation; phase II '2010–2013': analysis), reinvestigated the site of Farsh Abu A'lwan, or the anciently known as Farsh Shamma'a (Shams, 2011, 2013) (Figs. 1 and 2).

In 4th–7th centuries CE, Dier Fukarra, Habash, or Cosmas and Damian at the junction of W. Quweiz, W. El Tala'a El Saghera, and W. Tilah (Rudhwah), was the central monastic settlement to the

west of Farsh Abu A'lwan or Farsh Shamma'a, with an estimated agricultural area of 2500 m² and seven dwellers (monks). A two-story ruined building with a chapel's niche, clay pipe, conduits and pools were excavated at the site. Dier Fojar is a subsidiary monastic settlement in W. Quweiz to the southeast of Dier Fukarra and to the south of Farsh Shamma'a, where a ruined building and a clay pipe were excavated at this site, with an estimated agricultural area of 400 m² and two dwellers. Farsh Shamma'a is another subsidiary monastic settlement, where a ruined building and a hermit cell were excavated at this site, with an estimated agricultural area of 500 m² and two dwellers. Apart of the site name Dier Fukarra which refers to an existing Fuqara (Foggara) in the vicinity, and despite of the fact that the name was given to the neighboring central site to the west of Farsh Shamma'a, Uzi Dahari did not mention an existing tunnel-wells system in the vicinity of Farsh Shamma'a with exception to several conduits. Indirectly, the Foggara was identified by name on Dahari's survey maps before being investigated in March 2009 CE (Dahari, 2000).

2. The Sinai's Foggara 'Qanat'

Archaeologically and functionally, the Foggara of Farsh Shamma'a has unique physical aspects:

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