

Vignale Archaeological/Aerial Project

Vignale Archaeological/Aerial Project 2007

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Project background

After more than fifty years of archaeological work at the Etruscan site of San Giovenale, the research continues. In order to widen and fully understand the complexity of the ancient site an investigation of the landscape in the immediate surrounding felt compulsory. In the year 2006 Vignale Archaeological Project therefore initiated a landscape-archaeological survey of the sparsely studied high plateau, with its surrounding infrastructure, next south of the now dominating acropolis. This focus was a natural preference since previous excavations and studies involving an ancient bridge complex with adjacent buildings lead us south - towards and across the bridge over the Pietrisco brook. The subject of the latter is presented in a doctoral thesis by Yvonne Backe-Forsberg, *Crossing the Bridge – An Interpretation of the Archaeological Remains in the Etruscan Bridge Complex at San Giovenale, Etruria*. Trial excavations made on the Vignale plateau during the middle of the 20:th century could for the first time verify the presence of early and late Etruscan building activities. The ancient remains found on and in the vicinity of Vignale, to a degree added during the 2006 survey, however yielded for an even more effective survey method. In the spring of 2007 the project therefore incorporated a small airplane that could be manoeuvred by the team's pilots combining assorted remote sensing techniques.

The survey technique The plane used over Vignale and its surroundings was of the type ultralight class-A. It sports seats for two surveyors besides camera equipment. The plane was obtained for archaeological purposes and generously sponsored by the team member Hannu Kuisma. All flying equipment was brought to Italy from Mora in Sweden by car using a trailer. The project initially used a small runway close to the city of Blera and eventually started the two weeks daily survey operations from the airfield in Vejano. The latter is a three minutes flight from our objective where all remote sensing activities were carried out from altitudes between 50 and 400 meters. The remote sensing apparatus involved thermography besides conventional- and near infrared photography (NIR) – all of the cameras using a digital interface. NIR photography comprised both colour and black and white versions. The use of the thermo camera besides other remote sensing enquiries was made possible due to our cooperation and help from Rosa Lasaponara and Nicola Masini from Consiglio Nazionale delle Recerche (CNR), University of Potenza. Conventional photography was utilized for landscape aerial photographs in general but above all to detect variations in vegetation cover and soil types generated from underlying structures – that is, soil- shadow and crop marks. Our NIR-camera was a conventional DSLR-camera rebuilt to cover the NIR spectral channel which has a potential to further enhance vegetation marks. On the other hand, when using thermography, variations in soil temperature could help us to detect underlying structures in generating a relative colour scheme. A hidden well or a spring can produce an image where the wet and cold interior is depicted as a blue spot in relation to the surrounding warm-coloured structures. Where conditions are optimal, the same relationship between warm and cold can be detected among various features embedded in the soil. The project of 2007 was made possible from the generous financial contributions from Föreningen Svenska Rominstitutes Vänner, Torsten & Ingrid Gihls fond and Fondazione Famiglia Rausing.