

# LITHUANIA: A GLANCE AT HILL-FORT ARCHAEOLOGY FROM THE AIR

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## National identity and research traditions

Lithuania's hill-forts are merely a small part of the great mass of fortifications which extended throughout the European continent during prehistoric and early historical times. The purpose of this article is to assess possibilities for employing the methods of aerial archaeology in present-day hill-fort studies, as seen against the backdrop of a brief history of archaeological studies in Lithuania.

*Figure 1.*  
*Jurbarkas Hill-fort,*  
*Jurbarkas town,*  
*photographer*  
*Z. Baubonis.*



Interest in hill-forts, as witnesses of a heroic past, came to prominence during the late 19<sup>th</sup> century, in the course of the Lithuanian national liberation movement. Hill-forts became one of the means for forming a national identity in the context of the conflict between Lithuanians and the Teutonic Order, as evidenced in the historical sources of the 13<sup>th</sup> and 14<sup>th</sup> centuries. Leaders of the national liberation movement, with their keen interest in Lithuania's past, directed their attention to hill-forts. In the words of Dr. Jonas Basanavičius, one of the fathers of the 20<sup>th</sup> century state of Lithuania, "It was atop these hills, I can bravely state, that my Lithuanian identity became affirmed" (Zabiela, 1995, p. 20; Zabiela, Baubonis, 2005, p. 4).

The professional investigation of hill-forts has become closely identified with the name of L. Krzywicki, perhaps above all others in the history of Lithuania's archaeological sciences. Krzywicki began his survey and research work on hill-forts at the beginning of the 20<sup>th</sup> century (Kulikauskas, Zabiela, 1999, pp. 149-158). Of the 993 hill-forts that are located on Lithuania's current territory, many of them already disturbed, 184 have been investigated to one degree or another over the past hundred years (Zabiela, Baubonis, 2005, pp. 4, 6).

When discussing the scientific interpretation of archaeological material derived from Lithuania's hill-forts it is worth mentioning that certain themes have tended to dominate Lithuania's archaeological historiography. Probably the most widely discussed topic revolves around the structural evolution of hill-forts and their fortifications. A good deal of attention has also been paid in the literature to the relationship between hill-fort material and aspects such as trade, exchange and crafts (Zabiela, 1995). At the same time, the identification of locales and castle sites mentioned in the medieval written sources has given rise to much discussion of the historical and archaeological evidence in the writing of historians such as Gudavičius (1991) and Maksimaitienė (1991, pp. 49-51).

The trend towards culture-historical interpretation, widely disseminated in Lithuanian archaeology to date, is based on histori-





*Figure 2.*  
*Varnupiai Hill-fort,*  
*Marijampolė Region,*  
*photographer*  
*Z. Baubonis.*

cal events and discussion about ethnic and cultural boundaries. The accepted opinion is that the concentration of hill-forts in the western and eastern parts of Lithuania's present territory represents an organised defence system against Scandinavian and Slavic expansion in the 10<sup>th</sup> to 12<sup>th</sup> centuries (Gimbutas, 1963, pp. 148-154; Daugudis, 1977, p. 18; Zabiela 1995, pp. 163, 164). Hill-country predominates in the areas where most of the hill-forts are found. Thus, it is not unreasonable to suggest that the character of the landscape in these parts of the country was itself a major influence on the distribution of the hill-forts (Volkaitė-Kulikauskienė, 1958, pp. 22, 23).

### **Hill-forts and aerial photography**

With good reason Vladas Nagevičius (1881-1954), a general in the Lithuanian Army during the interwar period, is seen by many as the pioneer of aerial photography in Lithuanian archaeology. He first became interested in archaeology while studying medicine

in St. Petersburg and later employed aerial photography as a new method in the archaeological sciences in 1931-1934 while excavating the hill-forts at Apuolė and Impiltis in northwestern Lithuania (Jarockis, 1995, p. 25; Zabiela, 1998, p. 145). Sadly, the method was never to be applied again in the interwar years in Lithuania.

After World War II there was no aerial photography of archaeological sites in Soviet Lithuania, nor in any other part of Eastern Europe, because of restrictions on other than military flying. Vertical aerial photographs were, however, taken during the Soviet years for topographical purposes. The resulting negatives, stored today in Lithuanian archives, were for long treated as secret documents, only becoming available for archaeological use in the early days of *perestroika* (Pilipaitis, 1994, p. 17; Zabiela, 1998, p. 146).

Aerial photography of archaeological sites commenced again in Lithuania in 1993, after a break of nearly sixty years. The first results were obtained near Šiauliai, in northern Lithuania. Traces

Figure 3.  
Šaukštelis Hill-fort,  
Telšiai Region,  
photographer  
R. Jarockis.







Figure 4. Bubiai Hill-fort, Šiauliai Region, photographer R. Jarockis.

of a dwelling in the Iron Age hill-fort of Bubiai were discovered through the presence of changes in vegetation-growth (crop-marks) on an aerial photograph taken there. Some time later geological bore-holes in the surroundings of the hill-fort confirmed the speculations made on the basis of the air-photographic evidence (Jarockis, 1994, p. 47).

In 1994 archaeological sites were photographed in western Lithuania, the plough-leveled Jakai Sudmantai hill-fort near Klaipėda being identified as the possible location of the Teutonic Order's Windenburg Castle at Ventės Ragas, in Šilutė Region. In the same year aerial survey was also undertaken in eastern Lithuania, photographing castle sites in Senieji Trakai (Trakai Region) and in the surroundings of the Šeimyniškeliai hill-fort in Anykščiai Region (Zabiela, 1996, p. 73; 1998, p. 147).

In 1996, with financing from the then Cultural Heritage Centre, a long-term aerial photography programme was launched for the



first time in Lithuania. Its primary purpose was to photograph already-known archaeological sites as well as to search for new ones. Over time the range of cultural heritage features being photographed from the air has expanded further. In 1999-2002, through funding from the Lithuanian Department of Cultural Heritage Protection and the Ministry of National Defence, other aspects of the country's cultural heritage began to be photographed from the air, in addition to archaeological sites as such (Jarockis, 2005, p. 490).

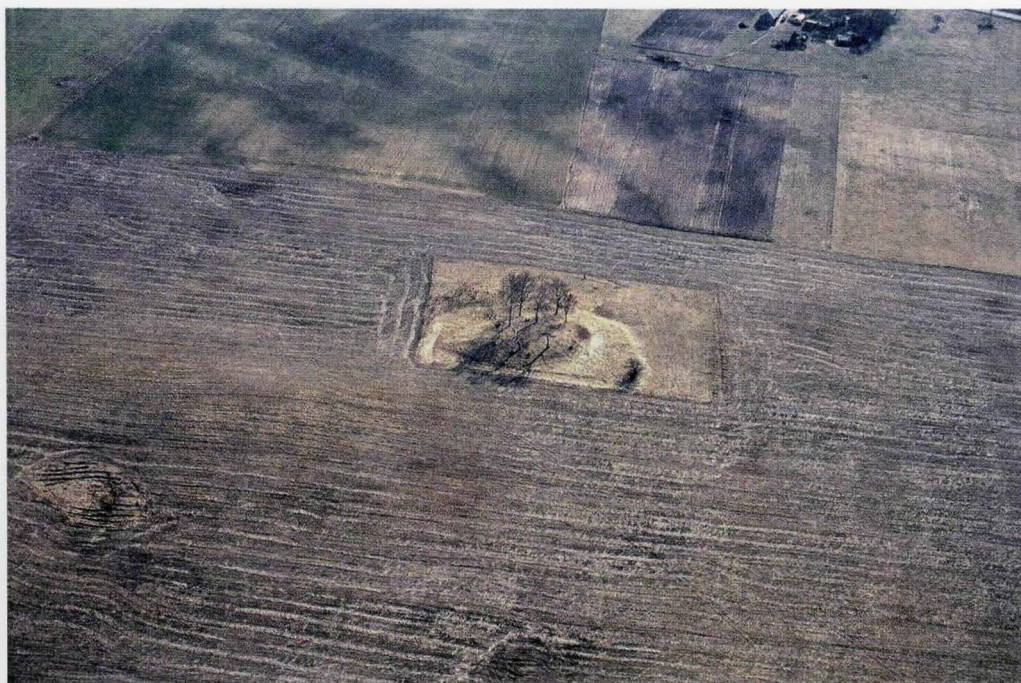
From 2004 onwards the Department of Cultural Heritage under the Ministry of Culture, along with partners from eleven other European countries, has been participated in the Culture 2000 project 'European Landscapes: past, present and future', the Lithuanian contribution to the work bearing the title 'Lithuanian Heritage from the Air: through recording and collection to education'. The programme was not aimed solely at photographing cultural

*Figure 5. Pašatrija Hill-fort, Telšiai Region, photographer R. Jarockis.*

*Figure 6. > Normančiai Hill-fort, Šiauliai Region, photographer R. Jarockis.*

*Figure 7. > Punia Hill-fort, Alytus Region, photographer R. Jarockis.*







heritage features from the air. A wider objective was maximizing the use of aerial photographs in cultural heritage work through development of a well-ordered and accessible database of digital aerial images based on vertical photographs taken in the recent and more distant past for general mapping purposes. This database is being constantly supplemented by new photography aimed at the practical requirement of protecting and monitoring the cultural heritage as well as at facilitating scientific research and cultural heritage education (see <http://www.muzarp.poznan.pl-EuLandscapes-countries-lithuania-Interim%20Report%20Lithuania.pdf.url>; Jarockis, 2007).

In parallel with the Culture 2000 project another initiative in aerial photography was placed in hand in Lithuania in 2004-2005, hill-forts being systematically photographed from the air through funding provided by the Department of National Defence so as to provide illustrations for an atlas of Lithuania's hill-forts (Zabiela, Baubonis, 2005, a, b, c).

*Figure 8.  
Biržuvėnai Hill-fort,  
Telšiai Region,  
photographer  
R. Jarockis.*







Figure 9.  
Kernavė complex of  
hill-forts and township,  
Širvintos Region,  
photographer  
R. Kraujalis.

### Hill-forts and their natural and cultural environment

Glancing at the present vision of hill-forts in Lithuania it is difficult to gain an understanding of clear and common features that interconnect one or another group of sites. Aerial photography offers a chance to look at hill-forts from a completely different perspective, providing a comprehensive view which is significantly more informative than the usual written descriptions, drawn plans or photographic illustrations based on ground-level views.

The term hill-fort – *piliakalnis* in Lithuanian – is composed of two words, *pilti* ‘to pour’ and *kalnas* ‘hill’. The construction of an earth-and-timber fortification required, first of all, the selection of a location which already enjoyed some kind of natural protection. This often took the form of a promontory at the confluence of two rivers, a hill beside a lake or a site protected by surrounding bogs. Natural obstacles of this kind generally protect a hill-fort on one,

two or even three sides. Meanwhile, the parts of a hill-fort that were not protected by nature were fortified by artificial defences in the form of excavated ditches, embanked ramparts or the deliberate steepening of natural slopes (Kulikauskienė, 1958, p. 23; Zabiela, Baubonis, 2005, pp. 4, 5).

The structural features of hill-forts are probably seen at their best through the means of aerial photographs. These can help in the classification of the hill-forts and in the compilation of typological schemes – grouping the hill-forts on the basis of their physical form is very difficult when based purely on ground-level observation. From a topographical and morphological perspective it is possible to divide Lithuanian hill-forts into two major groups: those built on river terraces (Figure 1) and those located on hilltops (Figure 2). In addition, in broad terms, hill-forts can also be subdivided into so-called oval (Figure 3) and oblong sites (Figure 4) (Volkaitė-Kulikauskienė, 1958, p. 23, Zabiela, 1995, p. 74, Picture 54).

Ramparts and ditches occur along the edges of the summit plateaus, on the slopes and at the foot of hill-forts. The earthworks have in many cases have been leveled by centuries of human activity, in particular ploughing. The 'terraces' that are seen today on the slopes below many hill-forts represent the remains of former banks and ditches (Figure 5) (Zabiela, Baubonis, 2005, pp. 4, 6). At times traces of former ditches can also be traced at the foot of hill-forts on the basis of air-photographic evidence (Figure 6).

By photographing sites repeatedly over a period of time it is possible to characterize their physical condition and state of preservation, many of them having been heavily disturbed or obscured by water and wind erosion (Figures 7, 8).

Aerial photography provides the possibility not only to discover or to establish the form and condition of single sites but sometimes to characterize whole groups of sites. Hill-forts, like other settlements in the past, did not exist on their own – they were founded and took their subsequent development within the



broader context of an established cultural landscape from their own and other times.

Some former hill-forts, along with other settlements displaying more or less obvious signs of urbanization, continued in use well into the Middle Ages. Gradually, as timber castles declined in importance during the 14<sup>th</sup> and 15<sup>th</sup> centuries, manor-houses began to fulfill a central function within rural villages, some of them sited in close vicinity of former hill-forts (Zabiela 1995 p. 182). Churches were built and market-places established in their vicinity. In this way, many small towns or 'manor-boroughs' came into existence in Lithuania during the 15<sup>th</sup> and 16<sup>th</sup> centuries (Figure 9) (Miškinis, Šešelgis 1965, p. 218).

### Summary

There is an appropriate symbolism in the fact that the first sites photographed from the air in Lithuania, after a break of sixty years, were the very hill-forts that had been the subject of pioneering aerial photography in the years before World War II. Hill-forts have always occupied an important place in Lithuania's archaeological studies, but not *only* in archaeology. They have for long served as symbols of national identity and ethnic pride, not least in the days of the national liberation movement in the later 19<sup>th</sup> and early 20<sup>th</sup> centuries. In our own day, too, they remain visually striking and effective focal points in promoting the idea of national history.

As a source of knowledge, aerial archeology today is not merely limited to the photography of known archaeological features or the search for 'new' archaeological sites. It is also a tool in basic scientific research, helping us to reconstruct parts of the ancient landscape through the careful decoding and interpretation of evidence presented by pictures taken from the air. In addition to oblique air photographs taken by archaeologists themselves from light aircraft, vertical air photographs, digital imagery and representations of the earth's surface obtained through airborne laser scanning or other airborne remote-sensing methods all have a widening scope of application in modern-day aerial archaeology,

as well as for archival and for cartographic purposes. Information gathered through aerial photography and other forms of airborne recording can also be combined, in many instances, with data derived from ground-level geophysical survey.

Clearly, the time has now come to apply similar methods of research in exploring the archaeology of Lithuania's rich hill-fort inheritance. If we fail to use modern research methods in the 21<sup>st</sup> century we will be unlikely to learn more about the hill-forts themselves, or about the people who built and lived within them.

## References

- Daugudis V. 1978. Gyvenvietės ir pastatai. *Lietuvių materialinė kultūra IX-XIII a.* Vilnius, pp.14-47.
- Gimbutas M. 1963. *Ancient peoples and places. The Balts.* London: Thames and Hudson.
- Gudavičius E. 1991. *Miestų atsiradimas Lietuvoje.* Vilnius.
- Jarockis R. 1994. Bubių piliakalnio ir papėdės gyvenvietės 1993 m žvalgomieji tyrinėjimai, *Archeologiniai tyrinėjimai Lietuvoje 1992 ir 1993 metais.* Vilnius, pp. 47-48.
- Jarockis R. 1995. Archeologija ir aerofotografija. *Baltų archeologija* Nr. 3, p. 25.
- Jarockis R. 1998. Archaeology and aerial photography in Lithuania. *Lithuanian archaeology: investigations and findings.* Vilnius, p. 30.
- Jarockis R. 2007. Lithuanian heritage from the air. Through recording and recording to education. Musson C., Horne P. (eds.) *European landscapes: past, present and future. Culture 2000 project. Final report,* pp. 50-53.
- Kulikauskas P., Zabiela G. 1999. *Lietuvos archeologijos istorija (iki 1945 m.).* Vilnius.
- Miškinis A., Šešelgis K. 1965. Miesto gyvenviečių tinklo vystymasis Lietuvoje iki XX a. vidurio (1940 m.). *Lietuvos TSR aukštųjų mokyklų mokslo darbai. Statyba ir architektūra* IV, 2, 1965, pp. 215-240.
- Maksimaitienė O. 1991. *Lietuvos istorinės geografijos ir kartografijos bruožai.* Vilnius.
- Pilipaitis A. 1994. Archeologinių paminklų kartografavimas. *Baltų archeologija* Nr. 3, pp. 16-17.



Zabiela G. 1988. Aktualūs kultūros paminklų tyrinėjimų uždaviniai. *Konferencijos pranešimų tezės*. Vilnius.

Volkaitė-Kulikauskienė R., 1958. *Lietuvos archeologiniai paminklai ir jų tyrinėjimai*. Vilnius.

Zabiela G. 1996. Šeimyniškėlių piliakalnio tyrinėjimai 1994, 1995 metais. *Archeologiniai tyrinėjimai Lietuvoje 1994 ir 1995 metais*. Vilnius, pp. 73-76.

Zabiela G. 1998. Application of alternative methods in Lithuanian field archaeology (up to 1996). *Archaeologia Baltica* t. 3. Vilnius.

Zabiela G., Baubonis Z. 2005a. *Lietuvos piliakalniai. Atlasas, t.I*. Vilnius.

Zabiela G., Baubonis Z. 2005b. *Lietuvos piliakalniai. Atlasas, t.II*. Vilnius.

Zabiela G., Baubonis Z. 2005c. *Lietuvos piliakalniai. Atlasas, t.III*. Vilnius.