

ABSTRACT

Relics of pre-modern arable fields as a permanent element of the Poland's cultural landscape

The subject of the dissertation is the remains of arable fields preserved in the cultural landscape of Poland. Such sites can be found in a large part of Europe, from the southern British Isles and northern France, through Belgium, the Netherlands, Germany, Norway, Poland and Estonia. Until recently, there were no known remains of arable fields in Poland. This has changed with the spread of airborne laser scanning. The thesis includes a catalogue of 494 complexes of pre-modern arable fields and a further 413 sites requiring further verification. This demonstrates the scale of the phenomenon and the need for extensive research into the chronology, function and internal dynamics of farmlands.

The thesis has three main aims:

- To summarise the history of research, the state of knowledge and the extent of the occurrence of Celtic Fields.
- To describe the methodology of working on this type of site and to identify the possibilities offered by modern research methods.
- To develop a theoretical model of the formation and functioning of relics of arable fields and to verify it on the basis of the research carried out in the Białowieża Forest.

The first step in this direction is to summarise the history of research. A survey of the remains of Celtic Field type fields shows how widespread and complex this phenomenon is.

The second stage of the thesis is to describe the research methods that can be used in the analysis of arable relics. These range from remote sensing (aerial photography and airborne laser scanning), through archaeobotany, soil micromorphology and dating methods, to phosphate content in the soil.

The third part of the thesis is a synthesis of theories on the genesis of the balks and their functions. A review of the roles played by the balks leads to the conclusion that they were places for animal grazing, beetle banks and boundaries. This last point goes a little deeper and allows us to see that the territorial division of the landscape was important not only for utilitarian reasons, but also for social and symbolic ones. Boundaries helped to consolidate the community, define ownership and 'tame' the landscape.

In the light of the considerations contained in this thesis, it is impossible to sustain an intuitive vision of a landscape filled with Celtic Fields. The internal dynamics of such systems were high and the functioning of the fields was spread over a long period of time. If we were to look at an arbitrarily chosen moment in the functioning of the Celtic Fields complex, we would see both cultivated plots, meadows, pastures and fallow land. The fields currently in use would occupy only a small percentage of the available area. This vision is supported by publications on soil fertility and fertilisation methods in prehistoric times.

The next step is to build a theoretical model of the formation, evolution and functioning of the complexes. Thanks to the research carried out in 2018-2021 in Uroczysko Szczekotowo in the Białowieża Forest, it was possible to verify and confirm the validity of the model presented in the thesis. This part is a case study in which almost all the previously presented research methods were verified. Thanks to the analysis of macro-plant remains collected during the excavations, it was possible to certify the cultivation of rye. It was also possible to carry out radiocarbon dating, which revealed two horizons in the use of the site, the first linked to the Late Iron Age (1st-2nd century AD) and the second to the Early Middle Ages - around the 10th century AD. The analysis of pottery sherds confirms this chronology.

At present, the Postołowo complex is the only extensively researched site of the Celtic Fields type in Poland. Its functioning fits well into the model of the formation and functioning of agricultural field relics proposed in the thesis. This allowed us to draw a number of important conclusions:

- Before cultivation began, the land was prepared by felling large trees and removing wood, then burning the small vegetation and forest litter.
- Diluvial processes began with the first opening of the landscape. The process was continuous and progressive.
- The site has two phases: the older, associated with the Late Iron Age, and the younger, associated with the Early Middle Ages.
- None of the phases of use of the site lasted longer than a few tens of years.
- The reason for the abandonment of the complex was the infertility of the soil and the consequent significant reduction in yields.
- The crops grown were rye and probably other cereals and hemp.
- The fields were fertilised, but not intensively.
- Household waste, ashes from fireplaces, etc. were used as fertiliser.