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Apiary-walls and pitfall-traps in Portugal: archaic constructions on the landscape

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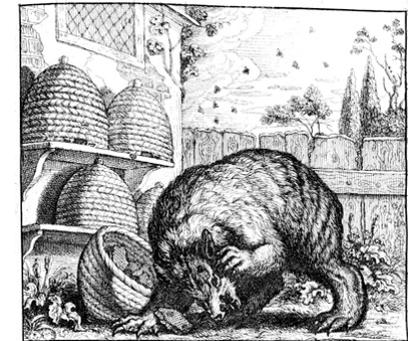
Vila Nova de Cerveira, PORTUGAL

Apiary-walls and **pitfall-traps**: two types of archaic constructions on the boundary between humans and wild animals, poorly represented in inventories related to cultural heritage.

APIARY-WALLS: a strategy for protecting beehives by stone or stucco-made enclosures from predators, such as brown bears.



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PITFALL-TRAPS: permanent traps built in stone, used in the war against the wolf motivated by livestock depredation.



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Main goals:

- inventory and general characterization of both construction types and promoting them as an important vernacular heritage.
- based on current knowledge of these constructions in Portugal, assess:
 - structural characteristics.
 - building area and density.
 - potential for rural development.

Research methodology:

- extensive bibliographic search based on recent and historical sources.
- personal interviews to local informers selected among rural communities.
- field prospection of material vestiges.

APIARY-WALLS: STRUCTURAL CHARACTERISTICS

Different architectural solutions for containment and protection of beehives exist in many countries of Europe, particularly in the Mediterranean region.



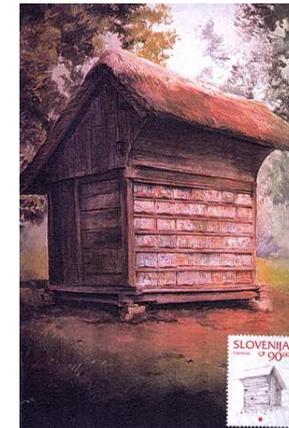
© E.Díaz

Escarpment wall
(Spain)



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Buildings
(Spain)



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Wooden houses
(Slovenia, Italy)

APIARY-WALLS: STRUCTURAL CHARACTERISTICS

Different architectural solutions for containment and protection of beehives exist in many countries of Europe, particularly in the Mediterranean region.



© E.Díaz
Stone-made towers
(Spain)



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© APISTORIA
Rock constructions
(Italy, Turkey)



Corcelles les Monts (F)

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Shelf structures
(France, Italy)

APIARY-WALLS: STRUCTURAL CHARACTERISTICS

In Portugal, the type of defensive structure for beehives is a closed wall structure (26 to 2704 m²), with high walls (> 2m high) and built in stone or earthen materials.



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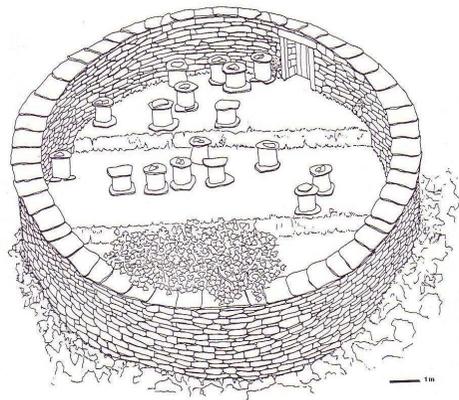
Main configurations:

- circular shape (including subcircular, elongated, elliptical or ovoid variants).
- four-sided polygonal shape (including quadrangular or rectangular variants).
- mixed forms as a semicircle or horseshoe shape.

APIARY-WALLS: STRUCTURAL CHARACTERISTICS

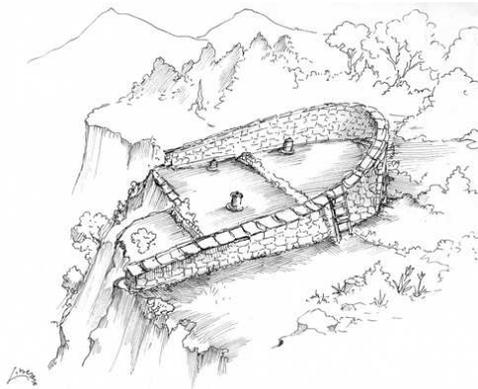
Determinants for topographic placement: bee biology, climatic factors, sun exposure, nearest water source and presence of floristic resources.

Main reason for building apiary-walls: defense against humans and wild predators (brown bears, badgers, mangoses, wildboars), fire and wind.



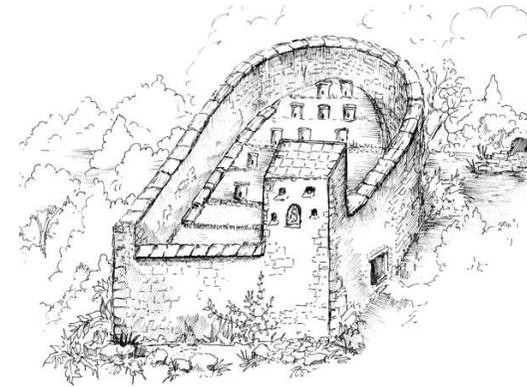
apiary-wall (Galiza)

© C.Gonzalez



escarpment wall (Astúrias)

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apiary-wall (France)

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APIARY-WALLS: CHRONOLOGY AND DISTRIBUTION

Chronology

Use documented since the 16th century in beekeeping manuals and other historical documents.

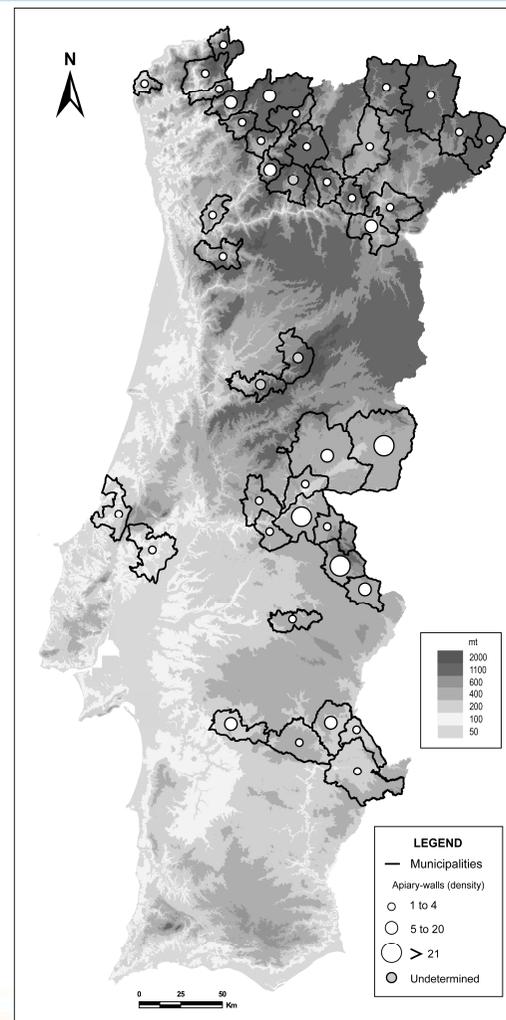
But can be much older (Middle Age).

Building areas

Asymmetries in the known distribution and density across Portugal.

Mainly distributed in mountainous areas, along main river valleys inland and lowland plains of southern Portugal.

Highest densities reflects a bigger research effort.

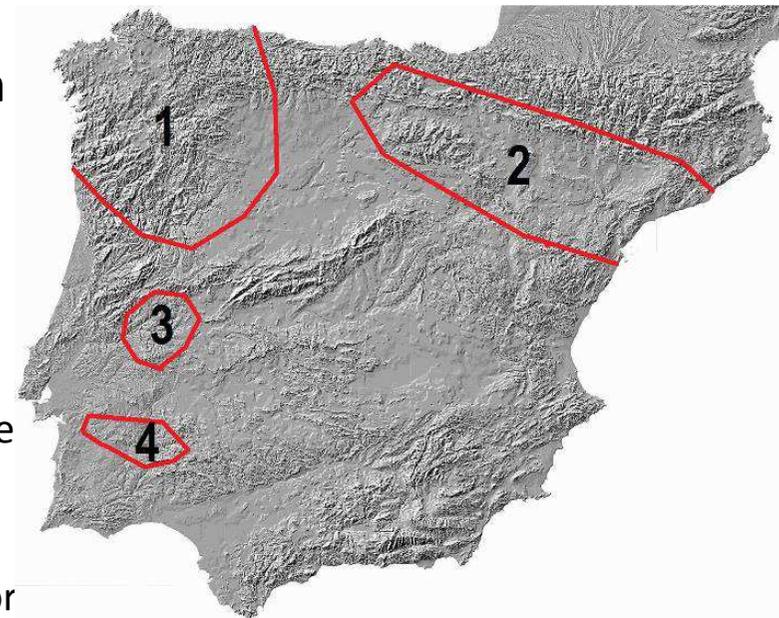


APIARY-WALLS: CHRONOLOGY AND DISTRIBUTION

Building areas

Four main areas with apiary-walls in the Iberian Peninsula:

- 1) Northwest Iberian (northern Portugal and Spanish regions of Galicia, Asturias and Castilla León).
- 2) Ebro river valley (Spanish regions of Aragon, Navarre Catalonia, and Castilla León).
- 3) Tejo river valley (Portuguese regions of Beira Interior and Alto Alentejo and Spanish regions of Cáceres).
- 4) Guadiana river valley (Portuguese region of Alentejo).



PITFALL-TRAPS: STRUCTURAL CHARACTERISTICS

Traps or pits constructed in stone for capturing wolves, as a means for controlling wolf numbers and reduce livestock losses.

These wolf-traps were constructed:

- in paths frequently used by wolves.
- usually near villages or livestock grazing areas.
- and had as a common feature the capturing of the animal inside a pit, through either active or passive means.

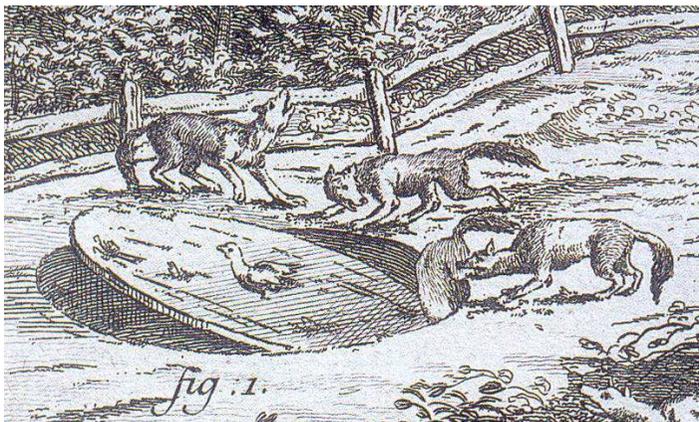
Examples of rural architecture important in an anthropological and social context and their use are still present in the collective memory of rural villagers.

Three main types of wolf-trap constructions.

PITFALL-TRAPS: STRUCTURAL CHARACTERISTICS

simple wolf-trap

- a single pit dug in the ground.
- frequently supported with stone walls.
- wolves would fall after being pursued by a hunting party or attracted with dead or living bait.



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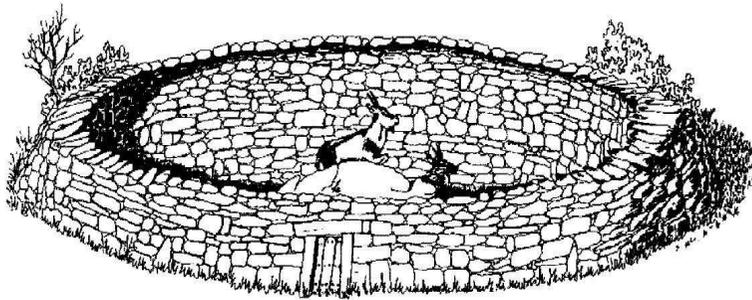


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PITFALL-TRAPS: STRUCTURAL CHARACTERISTICS

goat wolf-trap

- circular stone wall corral, with 15-30 meters in diameter.
- wolf attracted by a living bait placed inside, most frequently a goat.
- conceived to allow wolves an easy entrance (exterior wall height was lower) but from the interior the wall was 2 meters high, slightly slant inwards and included a top layer of overhanging, large, flat stones that formed an inner edge.



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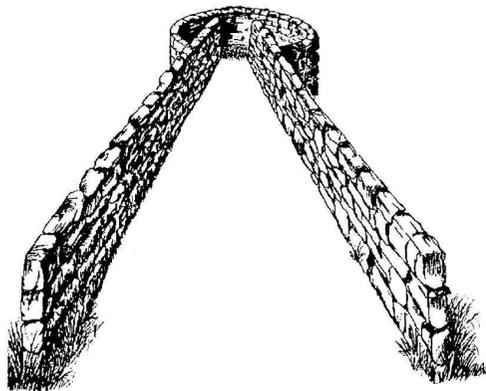


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PITFALL-TRAPS: STRUCTURAL CHARACTERISTICS

convergent walls wolf-trap

- a funnel-shaped structure comprising two long stone walls, up to 1km long and 2 meters high each, which converged into a deep pit.
- wolves were driven to the pit by a hunting party made up of large numbers of local people, from one or more villages.
- similarly to the “goat wolf-trap”, the effort required for the construction, use and maintenance of this kind of trap was dependent on a communal social system.



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PITFALL-TRAPS: CHRONOLOGY

Chronology

First references to the use of these wolf-traps are in documents dated from the 10th to the 12th centuries.

These constructions were regularly used for centuries as the main system to control wolf numbers.

Their use was still widespread until the end of the 19th century.

Last wolf captured in these kind of traps occurred in the 1970s.



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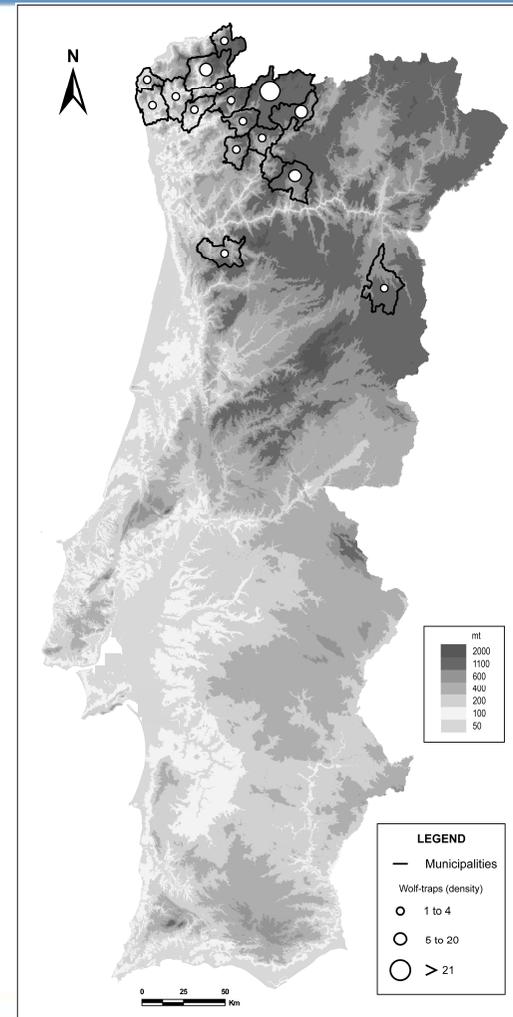
PITFALL-TRAPS: BUILDING AREAS

Building areas

Mostly associated with the mountainous regions of northwestern Portugal.

Localized areas with higher density of wolf-traps (up to 4 of these hunting structures located in areas of 100km², which could be used simultaneously or according to the seasonal grazing movements of the livestock).

These traps reflect a level of technical and operative specialization in wolf hunting in northern Portugal that does not have comparison with other regions of the world.



APIARY-WALLS AND PITFALL-TRAPS: POTENTIAL FOR RURAL DEVELOPMENT

Several actions aimed at the preservation of apiary-walls and pitfall-traps have already been implemented in Portugal, such as full structural reconstruction and their inclusion in touristic routes.

Need for legal protection and recognition to these structures due to their cultural and environmental interest, in order to ensure their future presence both in Portuguese landscape and culture.



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Final Considerations:

The apiary-walls and the pitfall-traps for wolves are two types of rural constructions poorly represented in inventories related to cultural heritage.

These rural buildings are open to multiple research approaches and illustrate a strong relation to the environment, both biotic and abiotic, and to rural economy.

Both buildings can give us insights on historical distributions of wild species, such as wolves and bears, and their relationship with Humans.

Moreover, the study of these structures is important from a cultural point of view and as a potential promoter for rural development through their touristic use.