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What's in a name?

## Exploring the definition of 'Cultural Relict Plant'

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## What's in a name?

### Exploring the definition of 'Cultural Relict Plant'

*Erik Persson*

## Introduction

When working with garden archaeology and garden archaeobotany, the plant material is of great importance. It is important to be able to identify which plants have grown in a particular garden and which have not, which of the plants you find in the garden today that are newly introduced or have established themselves on their own, and which plants that may be remnants of earlier cultivation. During the past two years, my colleagues and I have been involved in a project that deals with the latter kind of plants, that is, plants that were once actively cultivated and that have survived in their original place of cultivation until the present time (Persson, Ansebo & Solberg, this volume).

When we started the project we simply called the plants we worked with 'relict plants'. This is also the term that has been used unofficially in this field of research for some time. It was in no way an official term, however, and as it turned out, the term already had a different meaning in botany that was both older and better established. We were therefore in need of a better name for the plants we worked with.

To single out the plants we were working with, we used the following working definition: "Plants that were once, but are no longer cultivated in a certain area, and where a part of the population still exists even though it is no longer actively maintained". Although we still think this is a decent approximation, we have realized that there are several complicating factors we have had to think more about. We thus needed both a better name and a better definition. Both these tasks became important parts of the project.

## Literature and Internet Survey

A Google search on the term 'relict plant' returned 8 500 hits. A random selection was made of 50 of these hits by choosing the fifth link from the top of the first 53 result pages, removing 3 links that referred to our own project. Of the resulting 50 hits, 3 used the term 'relict plant' approximately the same way we did, though they did not provide a clearly stated definition of the term. The remaining 47 referred to relict plants as wild species that were once common but have decreased substantially in numbers, due to either human or natural (usually geological) factors, and where only isolated populations remained.

Wikipedia did not provide a definition of the term 'relict plant'. They did, however, have a general definition of 'relict': "A relict is a surviving remnant of a natural phenomenon." (Wikipedia, online, entry word: relict, 2012-12-15) They also presented a set of more specific definitions from different fields:

- In biology, a relict (or relic) is an organism that at an earlier time was abundant in a large area but now occurs in only one or a few small areas.
  - In ecology, an ecosystem which originally ranged over a large expanse, but is now narrowly confined, may be termed a relict.
  - In geology, the term relict refers to structures or minerals from a parent rock that did not undergo metamorphosis when the surrounding rock did, or to rock that survived a destructive geologic process.
  - In agronomy, a relict crop is a crop which was previously grown extensively, but is now only used in one limited region, or a small number of isolated regions.
  - In historical linguistics, a relict is a word that is a survivor of a form or forms that are otherwise archaic.
  - A relict was an ancient term for a widow, but has come to be a generic or collective term for widows and widowers.
  - In real estate law, reliction is the gradual recession of water from its usual high water mark so that the newly uncovered land becomes the property of the adjoining riparian property owner.
- (Wikipedia, online, entry word: relict, 2012-12-15)

Of these definitions, the one that refers to biology seems to fit rather well with how the term relict plant is used in the 47 Google hits mentioned above – apart from the fact that Wikipedia talks about organisms rather than species. None of the definitions mentioned in Wikipedia matched our need for a definition, however.

A search for articles with the phrase 'relict plant' in the title in Lund University Library database of academic journals resulted in 9 hits. In these 9 articles, the plants referred to as relict plants were invariably of the same kind as in the 47 Google hits mentioned above, that is, remaining isolated populations of wild species that had decreased substantially in numbers due to either human or natural (usually geological) factors (Denchev et al., 2011:373-380; García, 2008:106-113; García-Fernández et al., 2012:307-309; Kumar et al., 2011:602-603; Melville, 1975:67-88; Müller et al., 2006:227-236; Ninyerola et al., 2007:292-304; Šmídová et al., 2011:151-157; Valtuena et al., 2012:1423-1437).

Through the project, we found some other texts that referred to 'relict plants' in approximately the same way we did in the project (Guldager & Fosaa, 2009:146; Larsson et al., 2012:12f; Larsson & Lundquist, 2010:1,4; Lundquist, 2010:1ff; Løjtnant, 2007a; Løjtnant, 2007b). Larsson & Lundquist also use the terms "relict cultivated plants" (Larsson & Lundquist, 2010:2) and "plant relicts" (Larsson & Lundquist, 2010:3). These texts were not published in any of the influential international journals like the articles mentioned above, however. They were also dated later than the oldest of the articles that referred to 'relict plants' as remnants of wild species (Melville, 1975:67-88).

## The term 'Cultural Relict Plant' (CRP)

The result of the literature and Internet surveys thus did not provide any support for our tentative use of the term 'relict plant', and it did not provide any other term or definition that suited our purposes. It showed, however, that the term 'relict plant' already existed and had a meaning that differed substantially from what we needed. This means that to avoid confusion we did not just need a new definition but also a new name.

Our use and the more established use of the term 'relict plant' coincided at two points. Both uses referred to plants, and according to both uses, the plants were in

some way remnants of something that had existed but no longer did. This means it still made sense to keep both words ‘plant’ and ‘relict’. The most obvious difference on the other hand, was that the more established use of the term ‘relict plant’ referred to wild species while our use referred to cultivated plants. We therefore needed some way of marking that “our” plants were cultivated and not wild.

This led us to the decision to coin a new name by keeping the words ‘relict’ and ‘plant’ and add the word ‘cultural’. That way we got the new term: ‘Cultural Relict Plant’ (CRP). We thereby got a name that is more informative, and that enables us to clearly distinguish the cultivated plants we are working with from the wild species referred to by the term ‘relict plant’ on the Internet and in the journal articles mentioned above. A Google search on the term ‘Cultural Relict Plant’ resulted in 0 hits. The same was the case for the Lund University Library database. By using the term ‘Cultural Relict Plant’, we therefore hope to avoid confusion with the already established meaning of the term ‘relict plant’.

## Questionnaire survey

The project included a questionnaire survey aimed at experts in the field (see Persson, Ansebo & Solberg, this volume). One thing we asked the respondents was to suggest a definition of the term ‘relict plant’ that could replace the working definition mentioned above. We got the following 42 answers (translated from Scandinavian):

- 1. “Plants that are found in places where they otherwise can no longer be found.”
- 2. “Plants that have been cultivated (in an undefined historic period) at a location that is more or less deserted and that can still be found at that location.”
- 3. “Remaining single individuals of plants that used to be more abundant – cultural plants.”
- 4. “An old cultivated plant that has been brought from another country because it was useful.”
- 5. “Cultivated plants that remain at a location that today has been taken over by nature’s own development.”
- 6. “A plant that has survived for a long time at a location where it is no longer cultivated or taken care of. It must have been “left” for at least 50 years or more, or it will instead count as a historical trace of cultivation. I further define a relict plant as a ‘survivor’ – strong and competitive.”
- 7. “To me, it is a plant that has been cultivated for a long time in Sweden, maybe at an old homestead, etc. As a botanist, you sometimes find relict plants in the forest and then one starts thinking about those who used to live there and cultivate the ground there.”
- 8. “The same way you do.” [Referring to our working definition].
- 9. “A surviving plant that tells us something about a facility.”
- 10. “Genetic unit/plant material that remains from an older time when it was cultivated.”
- 11. “Plant that has been deliberately cultivated and has remained at the location.”
- 12. “Relict plant is a botanical term that for more than 100 years has been used about plants that were more abundant during a previous geological period. Lately, I have seen that the term has started to appear in a more cultural historical perspective.”

- 13. “Don’t know.”
- 14. “Just like above.” [Referring to our working definition].
- 15. “Surviving plants at a certain locality where they were originally cultivated (a long time ago).”
- 16. “Need more space to answer this question.”
- 17. “It could be plants that can still be found at one location, after the use of the location has been altered, but it can also be plants that have just been left at one location.”
- 18. “Plants that used to be more common but that for various reasons have remained at certain locations.”
- 19. “Plants that have been used at historical facilities and are not used any more, without a specified time.”
- 20. “Same as above.” [Referring to our working definition].
- 21. “Plants that have been cultivated at a location and have survived even though they are not taken care of anymore.”
- 22. “Remaining domesticated after active cultivation has ceased.”
- 23. “Original species partly preserved in its cultural historical context.”
- 24. “Small groups of living plants that can be assumed to have survived at the locations since medieval times.”
- 25. “Living plants surviving from an earlier cultivation, usually old, e.g. medieval.”
- 26. “A surviving plant that was once planted and cultivated.”
- 27. “A plant that grows at a location where a long time ago was cultivated. It can be an actual plant or seeds in the seed bank in the soil.”
- 28. “A taxon that during historical time (= after the glacial period) has been an important part of the vegetation including crops of farmland, but that today is red listed or rare.”
- 29. “A ‘remaining plant’ from previous cultivation.”
- 30. “Forgotten and resurrected.”
- 31. “Relict from an earlier time.”
- 32. “Cultural historical traces of previous cultivation.”
- 33. “A cultivated plant that has survived without being tended for a long time in a garden or a park.”
- 34. “A plant that tells cultural history about the place.”
- 35. “A plant that has grown for a long time (whatever that means) and that indicates some kind of cultural history about the place/plant/people who has owned it/lived there. Difficult to define. I don’t think the place has to be abandoned, so the 18th century oaks at Drottningholm are also relict plants.”
- 36. “A plant that has been imported and cultivated as food, medicine, fibre or an ornamental and has managed to survive for centuries close to human settlement even though the cultivation has ceased.”
- 37. “Plants that are no longer for sale and are rarely mentioned in the literature, but have survived in gardens from generation to generation, plants that people do not know the name of, even though they know the plant.”
- 38. “Surviving species (not necessarily cultivated plants) that originate from a different biotope.”
- 39. “Cultural plants that have been cultivated at a location for utility or beauty, but that for one reason or another are no longer in active cultivation, but that have survived at the location or as fugitives in the nearby area.”

- 40. “Plants planted by humans. (This is how we defined cultural plants in our inventories).”
- 41. “Plant that is planted/cultivated by humans and that continues to grow without human care.”
- 42. “A plant that remains after cultivation has ceased.”

## Results and Discussion

The questionnaire answers were presented and discussed at the Nordic Relict Plant Meeting in Egilsstaðir, Iceland 26-27 July 2012 (Persson, Ansebo & Solberg, this volume). Based on the survey answers, the discussion at the meeting, and a literature study, we compiled a list of criteria or characteristics that might be important for a CRP. The list is presented here. Each item on the list is followed by a short discussion:

- *Only cultivated plants can be CRPs.*

Some of the respondents to the questionnaire survey allow for non-cultivated plants, but most of the respondents only mention cultivated plants, and some respondents explicitly exclude non-cultivated plants. Non-cultivated plants are, as we saw above, already covered by the standard use of the term ‘relict plants’. It should also be taken into consideration that the cultural historical aspect is central for the study of these plants, and that it is inherent in the term ‘Cultural’. We therefore believe that cultivation is a highly relevant property for CRPs.

- *CRPs can be individual plants or populations and do not have to be entire species.*

Contrary to relict plants (in the established meaning of the term), a CRP does not necessarily have to be an entire species. It is, in fact, beneficial not to define CRPs as species for the following reasons: An individual plant or population can be a CRP in a certain location even though other individuals or populations of the same species at other locations are not. A CRP individual or population can also be genetically significantly different from other individuals or populations of the same species, which means it represents a particular slice of the genetic history of the species. It would not be possible to single out the CRP as representing a particular slice of the species’ history if the species as a whole was designated a CRP.

- *CRPs are bound to a certain location.*

The history of a CRP is intimately connected to the place where it was cultivated, and the history of the place is equally intimately connected with the CRP. As noted above, an individual plant or population can be a CRP in a certain location even though other individuals or populations of the same species at other locations are not. Individuals or populations in different locations can also be CRPs for different reasons, represent different genetic and cultural slices of the species’ history, and play different roles in the history of their respective locations.

- *The relict population is smaller than the original population.*

The term ‘relict plant’ (in the established meaning of the term) refers to species that are significantly reduced in size compared to an earlier distribution of the species. It also seems to be an inherent property of the term ‘relict’ that it denotes something that

is a remnant of what used to be. On the other hand, our informants do not mention this as a necessary property. It seems possible that a CRP can be a whole population that has survived the termination of its cultivation, or even a population that has spread in the vicinity after cultivation ceased. This does not seem to make the plants less interesting as CRPs even though the need for protection in these cases is not as urgent as it is for populations that are small and/or decreasing. Whether it is necessary for a CRP population to be smaller than when it was actively cultivated is, therefore, a question that needs further discussion.

– *Cultivation has ceased.*

As with reduced population size, the cessation of cultivation seems to be inherent in the term ‘relict’. In our working definition, this was one of the basic characteristics, and it seems to be the opinion of many of our informants as well, though one informant explicitly states that it is not necessary. A plant (in that case a tree) that has been taken care of for a long time should, according to this view, qualify as a CRP just like plants that are no longer taken care of. For methodological reasons, it might be useful to distinguish between plants that have survived without caretaking, and those that have survived through caretaking. A problem with such a distinction is how to handle cases where cultivation ceased but was resumed in order to protect the remaining plants. As with the question of decreased population size, this question merits further discussion. It might be that this or the former characteristic would suffice, that is, a plant can be a CRP (given that all other criteria are fulfilled) if population size has decreased *or* cultivation has ceased.

– *CRPs are introduced to the locality where they grow.*

This criterion seems inherent in the term ‘cultural’. It is also virtually impossible to identify a plant as a CRP if it does not differ in some way from naturally occurring plants in the area. It is doubtful that a cultivated plant that does not differ in some way from naturally occurring plants at the same location contains any useful information beyond the information that the wild plants in the area contain. How strict this criterion should be requires discussion. One interpretation is that the plants must belong to a non-indigenous species. This seems like a very strong demand, however. A less strict interpretation is that they must belong to a species or variety that is not naturally occurring at that particular location. This interpretation allows for CRPs that, for instance, belong to species that occur naturally in other parts of the country. It can be argued that it also makes sense to include plants that have been introduced to the garden from the surrounding wild populations, considering that this is probably the way many of the Nordic cultural plants came to be cultivated (Guldager & Fosaa, 2009:145). In this case, the CRP must have been subject to some breeding. Otherwise it would be impossible to distinguish them from the wild plants in the area (provided their wild relatives have not become extinct) and it would be subject to the problems mentioned above under this heading. In the literature, we found that Løjtnant, and Guldager and Fosaa distinguish between indigenous and introduced plants but include both categories in their studies (Guldager & Fosaa, 2009:129; Løjtnant, 2007a; Løjtnant, 2007b; Persson, Ansebo & Solberg, this volume).

– *CRPs are old.*

Being old is another property that seems to be inherent in the term ‘relict’. It also seems to have at least some importance for many of our informants, though they were in most cases very hesitant to point out a certain age as being necessary or sufficient.

This criterion will certainly be the subject of much discussion, and we expect it to be difficult to find a sharp and non-arbitrary cut-off point for how old a plant has to be to qualify as a CRP. We believe, however, that it is not fruitful to be too strict regarding the age. Maybe age can be a third leg in a disjunction together with reduced population size and past but not present cultivation, while the question of how old a plant needs to be to be of interest as a CRP may be best left to the aims and limitations of the individual research project. Larsson et al. (2012:12f) demand that the plants have survived at the locality for a long time. Their project deals with medieval plants, but they do not explicitly claim that a plant has to be that old to qualify. Neither do they specify any particular age to be necessary or sufficient.

- *CRPs carry information about the (cultural or genetic) history of the place or the species.*

CRPs have a large capacity of contributing to our knowledge of both cultural history and natural history. We believe that it is in this capacity the CRP has its highest value, and that it is therefore very important that a CRP fulfils this criterion in some way. If a plant or population does not provide any information about either the cultural or the genetic history of the species or the cultural history of the place, it is very difficult to identify it as a CRP both practically and conceptually. It is also of limited value beyond the value of a non-CRP.



**Figure 1.** Angelica (*Angelica archangelica*) has been cultivated in Iceland and played an important role as food as well as a medicinal plant. It is therefore classified as a CRP even though it is also a native wild plant in Iceland. Here, it is photographed in Hallormsstaður, south east Iceland. (Photo: Erik Persson).

Definitions commonly contain one or more necessary criteria that together form a sufficient set that, ideally, express the essence of the defined concept. This kind of definition is usually called a *de re* or *real* definition (Bernadete, 1993; Føllesdal et al., 1988; Lübcke, 1988; Thompson, 2008; Retana-Salazar & Retana-Salazar, 2004).



Normally, according to this kind of definition, something either is or is not an instantiation of the concept. We then have what we might call a binary concept because things can take either of two positions, either it is an instantiation of the concept or it is not. For some concepts, however, this is not suitable. It is not always the case that something is either A or not A. In some cases, things are more or less A. Concepts of this kind can be called gradual concepts. It was suggested at the conference that this might be the case with CRPs. If that is correct, a plant is not either a CRP or not. Instead, it is more or less a CRP. This gradual approach can be conceived of in two ways (or more often a combination of the two). A plant can be more or less a CRP by fulfilling the criteria in the definition to a higher or lower degree, or it can be more or less a CRP by fulfilling a larger or smaller number of the criteria. If we see CRP as a gradual concept, it is probably a combination. That is, if a plant can be more or less a CRP, then the degree to which it is a CRP is probably best decided by a combination of how many criteria it fulfils, and to what degree it fulfils them.

Some of the criteria on the list above are best seen as gradual, while others are best seen as binary. The connection to a certain place, population size, age, and how much information it carries, all seem like questions of degree. The introduction criterion can, as we saw above, be more or less strongly interpreted. This means that whether a plant can fulfil the introduction criterion is not gradual, but how strong versions of the criterion a CRP can fulfil can be seen as a matter of degree. Other characters, such as whether it is cultivated or not and whether cultivation has ceased, are probably more suitably seen as binary. The list as such seems to fit well with a gradual concept.

Whether one wants to see CRP as being a binary concept or a gradual concept is largely a question of how one intuitively conceives of CRPs. If it is too counter intuitive to conceive of CRPs as gradual, there is another alternative available in the form of family resemblance (Wittgenstein, 2009). This kind of definition does not consist of a set of absolute criteria, but rather a list of characters associated with the concept in question. For something to be an instantiation of a concept defined by family resemblance, it does not have to fulfil all the criteria. Instead, it is enough that it possesses some of the characteristics connected with the concept.

In our case, it would mean that the list above can be seen as a list of characteristics associated with CRPs instead of a list of criteria. A plant will then either be a CRP or not, and each CRP has to possess some of the characteristics (how many would be subject of further discussion) but not necessarily all of them, and not necessarily the same as other CRPs.

## Summary and Conclusions

We have found that the term ‘Cultural Relict Plant’ (CRP) is more suitable than the term ‘Relict Plant’ for the plants we are working with. This is partly because the latter expression already has an established use and definition that differs from ours, and partly because the former expression is more informative.

We have looked at different criteria for CRPs suggested in a questionnaire by experts in the field. The answers were discussed at a conference and eventually resulted in a list of characteristics that different informants connect to the concept.

Some of the items on the list need further discussion and scrutiny. One thing that needs further discussion is whether CRP is a binary concept, that is, whether something either is or is not a CRP, or if it is a gradual concept, that is, if something can be a CRP to a higher or lower degree.

An alternative solution is to define CRPs using a family resemblance definition where different plants and populations can possess different characteristics from the list but still belong to the “family” of CRPs.

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