

# *Faroese Spade-Cultivation, Reinavelta, Its Practice, Function, and History*

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## **Abstract**

An analysis of the cultivation practice of *reinavelta* has been reported, based on direct observations and documentary filming. Ecologically, *reinavelta* has been shown to be very well adapted to the humid and relatively cold climate. It has also been proved, that although the Faroese spade-form, the *haki*, may look relatively simple, it is in fact extremely well suited to *reinavelta*. The 'adapational quality' of an implement can only be judged in relation to its function. *Haki* is an integral part of *reinavelta*. The scarce material would indicate a relatively late development of the *reinavelta*-practice. It is possibly an analogous form of the 'ridged field' cultivation practice, specially developed and adapted on the Faroe Islands.

## **Background**

Since 1972 the traditional Faroese spade-cultivation, *reinavelta*, has no longer been used as a farming practice. When, in 1985, the Carlsberg Foundation funded an attempt to document on film the practice of *reinavelta*, it was actually on the verge of falling into oblivion.

According to plan, the film was to be

taken in Húsavík, the village where *reinavelta* was last seen in use. That proved, however, to be too late as nobody there could perform *reinavelta*, based on personal knowledge, acquired at the time, when it was still commonly practised (in the 1920s or early 1930s). Furthermore, the special field-form, *teigar*, were in Húsavík, as in most villages, about to disappear. The characteristic long, prismatic field strips of *teigar* no longer covered the whole infield, the *bøur*, as they used to do during the last century.

Fortunately, the research team successfully located an excellent site for the film, where the *teigar* were still intact. This was at the village Gásadalur, on the island of Vágar. Gásadalur is still one of the most isolated Faroese villages, the only remaining that has no connection by road to any neighbouring village. This might explain why the landscape has survived so well.

Fortunately, at Gásadalur, skilled people still knowing *reinavelta* were found. They were willing to demonstrate the practice even though it necessitated much memorizing and effort. Filming revealed a lot of fascinating detail, which otherwise probably would have been left unobserved. This current article is

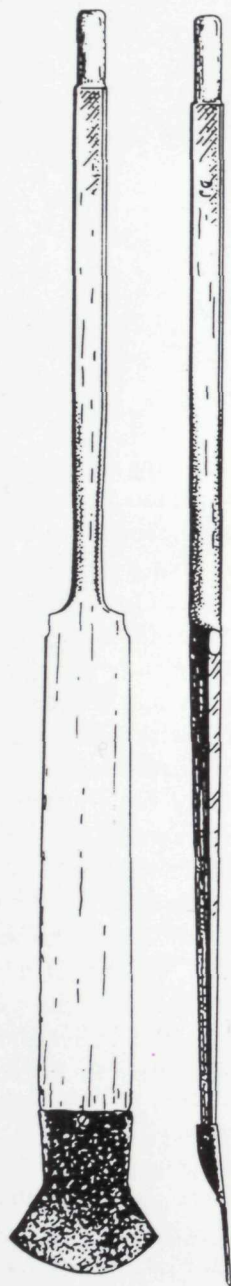


Fig. 1. *Haki*, measurd and drawn at Gásadalur in 1986 by R. Guttesen.

largely based on observations made during the filming and later discussions with those participating in the operation. In particular, the then curator, Jóan Pauli Joensen, Fornminnisav, and my colleague, lecturer Rolf Guttesen, were instrumental in collecting all the information, not to mention the *Gásadalsmenn*, who proved to be mines of information. Devoted work by the film technicians in spite of difficult conditions materialised in a high technical standard of filming that much helped verification of many observations. All are hereby gratefully thanked, including Rolf Guttesen for his valuable advice during the documentary preparation.

### The Practice of Reinavelta

Reinavelta is a type of tillage by hand which makes use of a special wooden spade, the *haki* (fig.1), to form and cultivate a very special field-type. The field is divided into 3 meter wide strips, *teigar*. The surface of each strip forms a tilted plane: one edge usually lying about 0.6 m higher than the opposite (see fig.2). Generally, the strips follow the gradient (run across the contours) to promote drainage, while, at the same time, the surfaces of the *teigar* are oriented to ensure best possible exposure.

*Velting* – tillage by *haki* – has several forms. Some of them have been introduced as recently as the second half of last century. The form *reinavelta* is mainly distinguished from other types of *velting* (such as *flatavelta*) by the resulting field form. The *haki* is used to dig them all.

Early descriptions of *reinavelta* date back to 1669 in the work by T. Tarnovius. Thereafter descriptions are found in L. Debes' book (1673), and in J.C. Svabo's account of



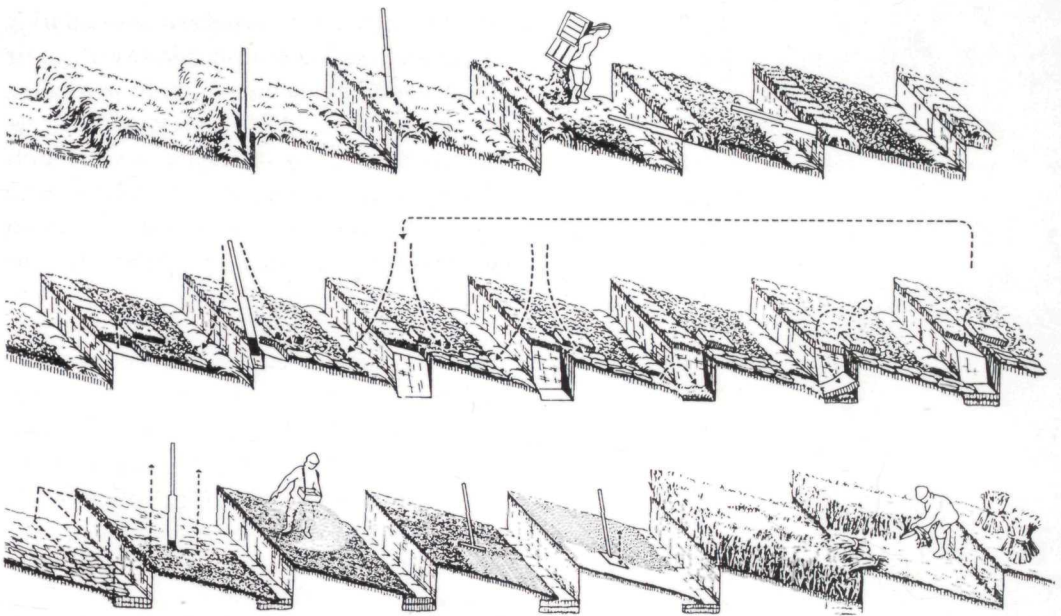


Fig. 2. Fields in Gásadalur 1986 showing the *teigar* field pattern of *reinavelta*. Photo by Jóan Pauli Joensen.

Fig.3. *Reinavelting*. Upper row: Loosening of the first row of top-turves of a *teigur*. Middle row: Digging of the 'block' of soil under the first removed turf. Bottom: Preparation of the drainage furrow, integrated into the *reinavelta* system. Drawn by J. Jónsson.

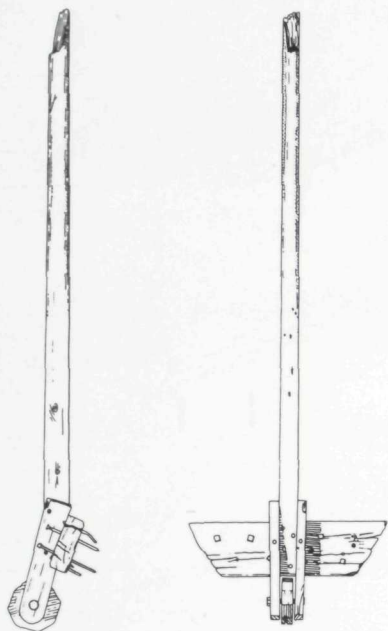
his visits to the Faroes (1781-82), and, in the form of illustrations, in the margin of C.L.U. Born's »Map of Suðuroy« (1791). These early sources all describe what seems to be a similar practice to the one recorded in Gásadalur recently.

Detailed professional descriptions of *reinavelta* are, however, rather rare, though the practice is mentioned in many books on the Faroes, e.g. by J. Landt (1800) H.J.J. Sørensen (1859), R.C. Effersø (1886), K. Williamson (1948), R. Rasmussen (1949), J. Dalsgaard (1956), H.J. Jacobsen (1958) and J. Patursson (1966). Two descriptions must also be mentioned because of their precision and rich detail: being those of Jóhannes av Skardi (1971) and Jóan Pauli Joensen (1980).

Apart from a few details, the practices

shown in fig.3 are similar to those recorded by the two authors. As an example, Joensen's sketch shows a different loosening of the first strip of top turves than the one observed during filming, but most of the other sketches are about the same. However, whereas the resulting *teigar* look similar, (mainly varying according to local drainage conditions), the procedures involved to work them seem to show quite a variation, both locally and individually.

The practices are best understood by looking at the illustration (or the film '*Kornveltting í Gásadali*'). In a first stage, the edge of the *teigur* is cut with the *haki*, and the grassy rim is turned over. Next the turf of the upper margin of the *teigur* is cut through by vertical slitting parallel to the edge, then separat-



ed from its base by a horizontal cut and divided into 30 by 30 cm 'slates'. Afterwards, fertilizer is brought to the field, usually carried on the back in a special type of square basket, *leypur* with a bottom flap that swings open like a door (see fig.4 and for further details Jóhannes av Skarði, 1964 and 1965). As it is very precious, the manure (mostly cow dung or mixtures thereof) is meticulously distributed onto the grass-surface of the *teigar*.

During the next stage, the vertical soil prism from above which the first turf was removed, is worked. The soil is cut almost vertically into slate-like blocks of soil, that are placed evenly on the manured field surface, being spread alternatively onto the ridges to the left and right of the digger. Hence the

surfaces of the two neighbouring *teigar* become covered with a dark layer of soil, uniformly covering the manure and grass on the top of the ridges, with the exception of the bottom part. Into this, a square of the grassy edge loosened during the very first operation, is turned back and the turf of the soil prism is placed on its top, forming a very coherent new surface.

When all the rectangular columns been worked similarly, and the whole surface is granulated by fine hoeing, *saksing*, the field is ready to be sown, raked with a *ríva*, and flattened with a kind of bat, the *klárur*, shown in fig.5. For *saksing* most often an old and worn *haki* was used and for raking a *ríva* that did not look much like a modern rake.

To complete the cultivation cycle, harvest was usually done manually by using a knife, and the sheaves of barley, *bundi*, tied with a straw-band, were placed at the edge of the *teigur* for initial drying. Before the barley, *korn*, was stored in the barn, it was dried – often for long period- in the field in heaps, *skríúgv*.

The field preparation, *velting*, was a laborious task. Still, it was claimed that one man in one day could dig an area that would yield one barrel of *korn* (approximately 400 sq.m. according to H.J. Jacobsen, 1958). He would have to be strong and skilled to do so!

### The Functions of the Reinavelta

#### *The function of the field form.*

Ecologically, the reason for the existence of *reinavelta* is the position of the Faroes close to the polar limit of cereal cultivation. At the same time, the extreme maritime type of climate poses other problems for the presumptuous cultivator.



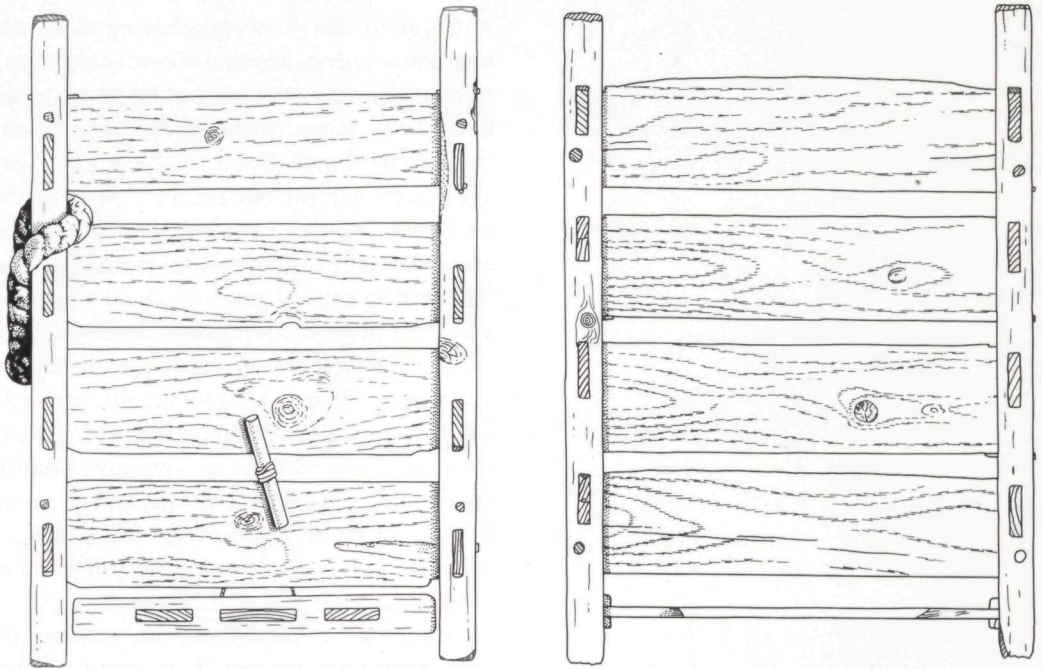


Fig. 4. *Rossleypur*. The bottom swings open like a door. Drawn at Gásadalur in 1986 by R. Guttesen.

The worst obstacles seem to be:

- the growing season is very short.
- average max. temperatures during period of ripening are very low.
- the soils are very wet, hence acid and of low fertility.
- the tendency for excessive leaching of plant nutrients is high because of high precipitation.
- the harvesting period is often too wet for natural drying of the crop.
- there is a risk of wind-erosion in the bare fields.

Generally, *reinavelta* with its sloping *teigar* eases most of the problems mentioned. It is a main remedy to improving the drainage,

done essentially by locally increasing the gradient of the cultivated surface, shortening the slopes and providing an erosion-resistant system of drainage channels. As a result, the soil temperature is raised, microbiological decomposition augmented, and the soil qualities ameliorated. As the *velting* also buries the grass vegetation through the inversion of the turves, turning up the underlying black soil face up, the surface albedo is lowered, and soil temperature increased due to radiation. Measurements show that this increase can be in the order of 1-2 degrees Celsius (L.E. Hansen 1987), adding the equivalent of about one month to the growing season. Part of the increase of temperature may stem from released heat from the biological

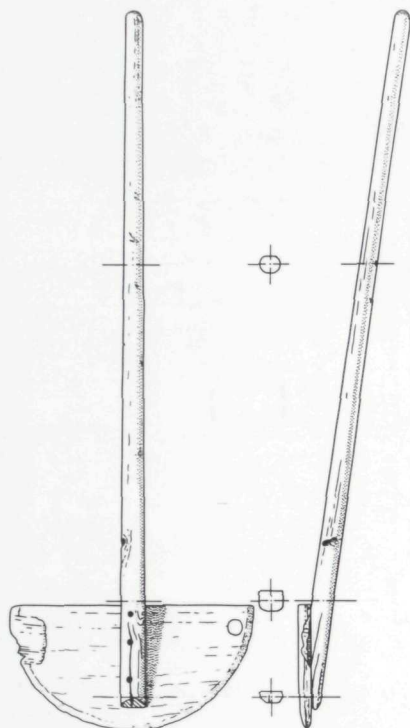


Fig. 5. *Klárur*, used to smoothen field after sowing. Drawn at Gásadalur in 1986 by R. Guttesen.

processes in the buried grass-manure mixture, which also helps to increase availability of plant-nutrients. In most cases soil improvement was furthered by the addition of household refuse that could increase pH, and the addition of seaweed.

An additional feature of *reinavelta*, in relation to the short growing season, was the utilization of relatively fast-maturing types of cereals, especially selected sorts of six-rowed barley (*valaks* and *langaks*), that could ripen under quite wet conditions.

Faroese soil thicknesses are very variable. It should be mentioned, that *reinavelta* easi-

ly adapts to these, although very thin soils must be avoided, unless a certain concentration of soil can take place. On steep slopes this may be accomplished by building of terraces, *brikað jørð*.

In a long term perspective the soil improvement seems to have been considerable. Since the rim of each *teigur* dug out and distributed on the surface amounted to about one seventh of the width of the *teigur*, and since the digging was repeated approximately every seventh year, the whole volume of a *teigur* was thoroughly treated and moved once per forty-nine years. This may seem a very intensive tilling of the soil, and in a way it is, because the whole surface of a field is cultivated in every cultivation cycle. Moreover, the soil is dug to a great depth.

Compared to ploughing, the volume of soil moved per harvest is, however, rather modest. In *reinavelta*, one seventh of the surface is treated down to about double plough-share depth against seven sevenths to a single share depth with ploughing, which means that ploughing moves at least three and a half times as much soil – and this was sometimes done seven times as often when the fallow period was omitted. For the hard work of ploughing a draught-animal is necessary; *reinavelta* can be performed without.

However, considering the large amount of precipitation and the resulting leaching of plant nutrition, ploughing may even be less desirable. Leaching is probably kept at reasonable levels by *reinavelta* because so much nutrition is chemically bound to the organic compounds of the rich grassward and the adducted manure.

Evidently, *reinavelta* is no specific remedy to the problem of the wet harvesting period.



Fig. 6. Types of spades from the North Atlantic region. From left to right: Norwegian 'krokspade', the South Ulster 'loy', the Irish 'caschrom', the 'delling-spade' from the Shetlands. (First three (redrawn) from A. Fenton, the last one drawn from a photograph).

The solution has been achieved by drying the crop in kiln houses, *sornhús*.

The last of the cultivation problems listed, that of wind erosion, is usually of limited importance to *reinavelta*, because the fields are mostly covered by vegetation, and drought is seldom.

In summary, the use of *reinavelta* in terms of solving all the major ecological problems seems to be ingeniously well adapted to the Faroese situation. Indispensable to the cultivation of barley, *reinavelta* was also very beneficial to the production of grass – essentially for the keeping of dairy-cattle as well as occasionally providing emergency winter fodder for the abundant sheep. J.

Landt (1800) and H.J.J. Sørensen (1859) maintained that *reinavelta* had its main effect on grass growth and saw its use for cereal cultivation mainly as of secondary importance. It is true that grass improves by manuring and better draining. Furthermore, grass roots are never destroyed by *reinavelta*, which ensures a quick regrowth of the grass. This means that the fallow is overgrown by grass immediately after the harvest, and that the composition of the sward, because of the good drainage, is characterised mainly by palatable species (eliminating sedges etc.).

Indisputably, *reinavelta* has had profound effects on both components of Faroese farming; livestock rearing and cropping. It is



note-worthy, that an optimization of the dual system requires a rather delicate balance between the number of heads of cattle, their dung production, their grazing area, the area cultivated with barley, and the size of work-force on a given farmstead.

*Reinavelta* added to the productivity of the area and the dependability of supplies under harsh climatic conditions. But the advantages were paid for with hard toil.

#### *Function of the haki*

*Reinavelta* seems a very well adapted system for manual cultivation, though this aspect may need to be proven by further investigation. Some points relating to the main implement, the wooden spade, the *haki*, shall be briefly mentioned here in an attempt to clarify whether the implement is equally suitable to its purpose.

The *haki* has a relatively simple form comprising a long handle and a long and narrow blade, *hakafótur*, that is tipped with an iron cutting edge, *grev*. The implement is relatively light in spite of its size.

Functionally, the long wooden blade and the sharp iron cutting edge are significant. If seen in use it is evident, that the *haki* is not a primitive imitation of a steel-spade. It is a specialised tool for a very specific task, and in fact it may be termed a 'turf-slicer' rather than a digging instrument. The sharpened cutting share permits an easy separation of a grass turf from its base, and the long wooden blade facilitates the slicing-off of reasonably long pieces of turf. For the lifting and turning of the turf, the long handle provides a good balance. These features explain why the *haki* was often tailor-made for its user, matching his force and proportions.

An interesting observation supported by

the interpretation of the film, was that the *haki* is pushed in such a way that the body weight is utilized to press the implement through the turf more than 'muscular power'.

Another observation is based on the straight shape of the *haki*, which is ideally suited to the postures and stances required when working the *teigar*. It is thus closely related to the field form. If this were a flat one, an implement with an angular shaped handle, e.g. like that of the 'caschrom', would appear to be more convenient and efficient. The example is noteworthy: a 'simple' implement needs not indicate an unsophisticated function. Neither does an implement necessarily be a good indicator of level of development of an agricultural system.

A total ecological evaluation of *reinavelta* will no doubt result in an appreciation of its fine adaptability as a *grass-turf cultivation system* to the rather marginal, humid, and cold, conditions of the Atlantic islands. But, at the same time, it must have required a sizeable workforce even though attempts certainly were made to minimize the toil as far as possible.

#### **The History of reinavelta**

Very little is known about the early history of *reinavelta*. Apparently the first literary sources, that with full certainty describe *reinavelta* are from the last part of the 17th century. Older sources establish beyond any doubt that there was an early cultivation (e.g. Seyðabrævið 1298), but whether this was by *reinavelta* is not known.



Neither do archaeological finds in the Faroes establish the early history of that specific form of cultivation.

In the areas with which the Faroese islanders have had historical connections, Norway, the Shetlands, the Orkneys, and Scotland especially – spade cultivation has similarly been well known for centuries. It encompassed the use of both 'straight' and 'crooked' spades. Straight-handled ones are known from most of these areas, more specifically in connection with a kind of *velting* (delving) from the Shetland Islands (the 'delling spade', A. Fenton 1978). Crooked-(handled) ones are known from Norway ('krokspaden'), from northern parts of Scotland, from northern Ireland (the 'caschrom'), and from southern Ireland (the 'loy', A. Gailey 1971). See fig.6.

The specific connection between form of spade and field form in *reinavelta* may be argued from two facts:

- crooked spades were not used anywhere to produce asymmetrical field forms like the *teigar*. The reason may simply be, that having a crooked spade, the need for making sloping seed beds would be non-existing.
- straight spades were elsewhere only used for the digging of 'normal' types of gardens and fields.(see illustrations, J. David 1984). The single exception may be the Faroes.

The difficult question to answer is of course why the feature has not yet been traced elsewhere, or is it truly unique in the Faroes? There are reasons to support the last suggestion. In most of the Atlantic margin areas, in an identical ecological niche, another solution is found instead, namely the 'lazy-bed

cultivation'. By this type of cultivation long strips of turves are cut and turned over to cover the neighbouring grass strip; only half of the surface is thus dug before sowing. The two forms of cultivation may well be of same ancestry, but separate development produced two different methods to facilitate the removal and turning of grass turves. Either the spade-handle had to be crooked to allow easy cutting of horizontal turves, or the turves lifted to a more convenient position for cutting with a straight spade.

However, it is debatable, if the two solutions actually are functionally identical. The *reinavelta*-form has impressive qualities ensuring efficient drainage and resistance to erosion.

Although lacking comparative research, *reinavelta* seems much superior to 'lazy-bed cultivation' regarding this aspect. May be this explains why *reinavelta* has been preferred in the most northerly, humid islands?

An interesting consequence of the rather distinct distributional pattern of the two types of spade-tillage is possibly that they may be considered rather independently developed. This may indicate an early severing of communications between the Faroes and the Shetlands and Orkneys (Scottish influence?).

Although it is not known when *reinavelta* was invented, it has here be surmised, that inspiration to its introduction may have originated from the ridged field systems, which were almost omnipresent in the surrounding countries during medieval times. *Reinavelta* can logically be seen as a analogue field form, developed where the terrain was not too inviting for the use of draught animals, and/or the available areas per

household for cultivation were small enough to be allow tilling by hand.

In spite of a fairly clear functional similarity between *reinavelta* and ridge field cultivation, their genetic histories most certainly differ. Technically, ridged fields and *teigar* are made by widely different processes: ploughing and the use of spade. Evidently, *reinavelta* must have its origin in some type of activity using spades. Possibly this was through the digging of drainage channels to improve grazing. If the turves removed were placed along one side of such a channel, grass-side down, it may have been observed, that growth was greatly furthered. A sequence of drainage-channels may have created a *reinavelta* pattern. Due to conventional wisdom of grass field cultivators, the high side of the *teigur* would of course have had to be dug because of its lustre growth at the time of the following cultivation.

Its origin is, naturally, purely hypothetical, but it rests on the seemingly logical assumption that the ideas of the beneficial effects of drainage and of turning grass-sods were accepted at the time of the origin of *reinavelta*. The refining of the form of the *teigur* and the preservation of a basically early spade-form were natural consequences.

In most of northern Europe, the ridge-field systems disappeared during the 19th century with the introduction of tile drains. This was not the case with *reinavelta* in the Faroes where the often rather thin soils may have been an effective hindrance in the use of subterranean drains. For some time *reinavelta* still remained the preferred system.

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