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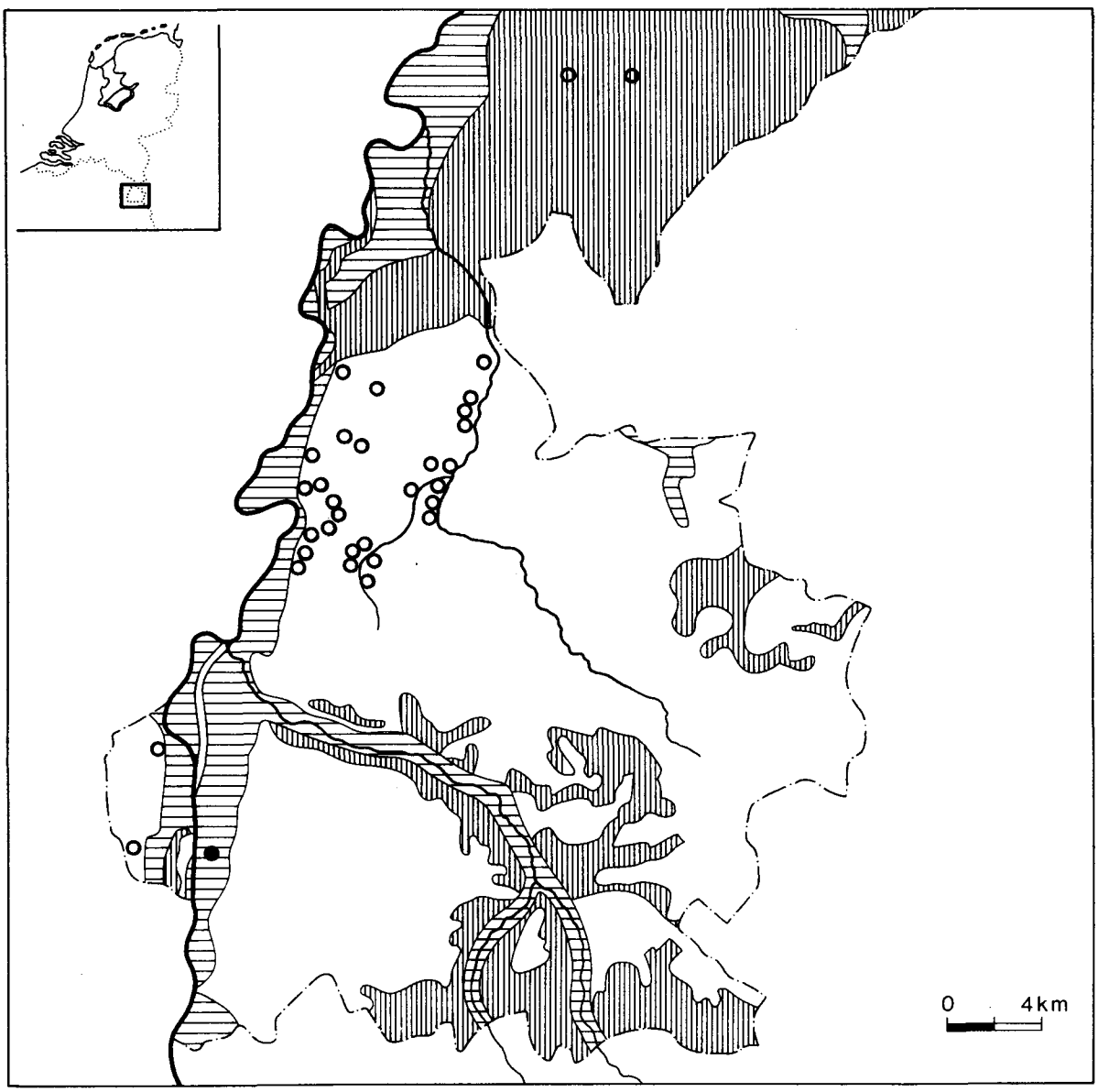
THE CROPS OF THE RÖSSEN CULTURE : SIGNIFICANTLY DIFFERENT FROM THEIR BANDKERAMIK PREDECESSORS - FRENCH INFLUENCE ?

Fig. 1 : Southern Limburg with the Maastricht-Randwijck site (black dot) and the earlier Bandkeramik sites (open circles); white : loess; hatched horizontally : younger alluvial clays; hatched vertically : remaining deposits.



In the autumn of 1987 an inhabitant of Maastricht, B. Knippels, discovered the first settlement of the Rössen culture on Dutch territory. The existence of such a site had been suspected for some time, because the adjacent German Rhineland is known to have been occupied by Rössen people, who left a rather important series of settlements (Dohrn-Ihmig 1983). A rescue excavation was needed. The investigation was carried out in the spring of 1988 under the direction of L.P. Louwe Kooijmans of the University of Leiden.

Fig. 2 a :
Kernels of naked wheat, Maastricht-Randwijck (5x).

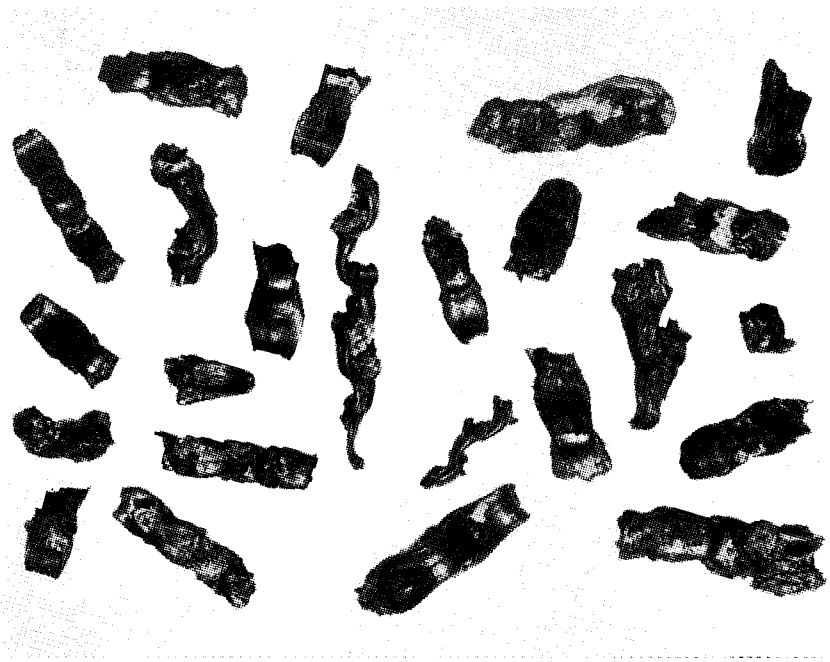


Fig. 2 b :
Chaff of naked wheat, Maastricht-Randwijck (5x).

The site is situated on the outskirts of the town of Maastricht in the Dutch province of Limburg in an area known as Maastricht-Randwijck. The settlement has been built on the Lower Terrace of the river Meuse instead of on one of the loess-covered plateaus nearby, as the earlier Bandkeramik sites in this region (Fig. 1). One of the characteristics of the Rössen people is the choice of a different site location. Their kinsmen in the Rhineland did the same, although they did not always choose lower terraces. For the sake of clarity it should be added that the Maastricht-Randwijck site is dated developed Rössen and therefore does not represent a direct continuation of the local Bandkeramik. There is a time gap between the two.

Unfortunately, post-depositional processes have destroyed all but the deepest pits. Thus, traces of houses are no longer present. However, the pits contained the normal settlement waste of sherds, flint, grinding stones and the like. Most of them also contained charred plant matter.

The botanical remains, and more precisely the carbonized seeds and fruits, are the subject of this short, preliminary, paper. Their analysis produced interesting results. The seeds were retrieved by the water-sieving of pit fillings through a 0,25 mesh-screen. They consist of remains of cereals, a few collected plants, and field weeds. Table 1 shows these species together with their frequency in the 12 samples. A frequency of 5, for instance, means that the species mentioned was found in 5 of the 12 samples. The samples come from different pits or from distinct layers within these pits and are thought to represent separate individual assemblages of charred material.

The field weeds are the very same as those of the northwestern Linearbandkeramik (see Bakels and Rousselle 1985, for instance). It is therefore surprising that the crops are not. The classic Bandkeramik crops are two kinds of hulled wheats : einkorn and especially emmer. In addition, the Maastricht-Randwijck cereals comprise a free-threshing barley and a free-threshing wheat. Both constitute a major component of the crop. Formerly, the naked wheat would have been described as *Triticum compactum* or *Triticum aestivo-compactum* but it is now known as *Triticum aestivum/durum*. *Triticum aestivum* is our bread wheat, *Triticum durum* is the macaroni wheat. In archaeological remains these two cannot be distinguished. An example of the Maastricht-Randwijck wheat remnants is shown in fig. 2.

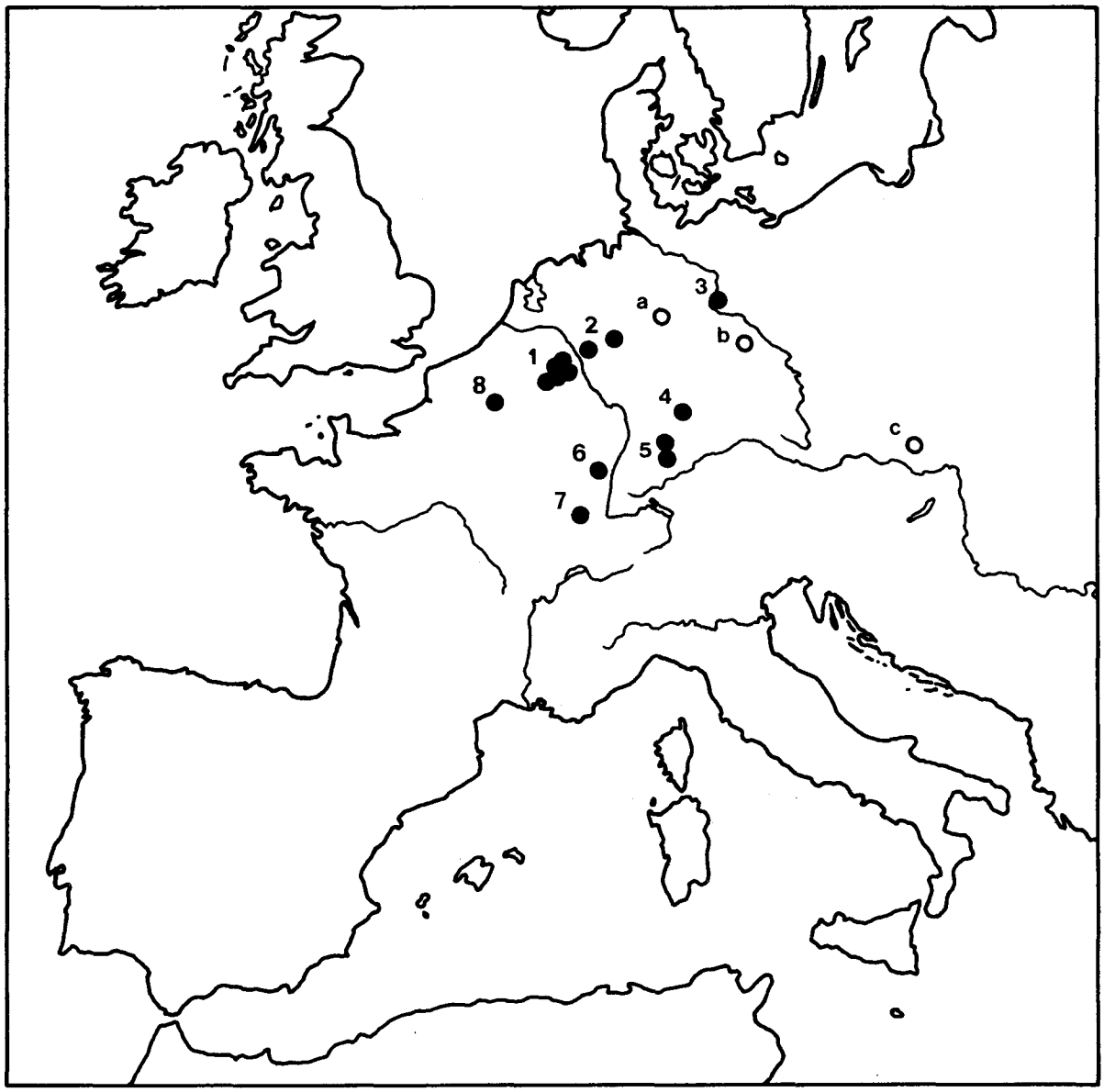


Fig. 3 :
The situation of the sites mentioned in the text :
1. Maastricht-Randwijck, Aldenhoven, Langweiler, Inden 1, Inden 3;
2. Ur-Fulerum, Deiringsen/Ruploh; 3. Wahlitz; 4. Schernau; 5. Heilbronn, Endersheim; 6. Rosheim; 7. Gonvillars; 8. Givry; a. Göttingen; b. Hain; c. Stúrova.

The finds are in contradiction with the current idea that the Bandkeramik and Rössen agricultures formed a continuum. In his book "European Prehistory" S. Milisauskas wrote, for instance : "no significant differences in the types of plants and animals exploited are observed in comparing the Middle Neolithic farming societies with their Early Neolithic predecessors in most areas of Europe. For example the data from a Middle Neolithic Rössen culture in central Europe indicate that the same plants were cultivated as during the Early Neolithic." (Milisauskas 1978).

Does Maastricht-Randwijck perhaps form an isolated case in having a different set of crop plants? A rather brief survey of the available literature shows at least ten relevant excavation reports including botanical surveys. There may be more. These ten sites are the Grossgartach site of Endersbach, the Rössen sites of Langweiler, Inden 1, Inden 3, Aldenhoven, Ur-Fulerum, Deiringsen/Ruploh, Heilbronn and Wahlitz, and the Bischheim site of Schernau (Piening 1979; Knörzer 1971 a; Knörzer 1971 b; Schiemann 1954; Hopf 1976; Bertsch 1947; Rothmaler 1955; Hopf 1981). In all these sites hulled wheat and naked barley have been found. Six of them also produced naked wheat. This wheat is not reported to have been found at the Grossgartach site, at Deiringsen/Ruploh from which site only burned daub was investigated, at Ur-Fulerum from which only one find was analysed, and at Inden 3. At the other sites *Triticum aestivum/durum* was found in quite significant amounts. In the new book by U. Körber-Grohne, "Nutzpflanzen in Deutschland", Wahlitz is even mentioned as the first site in central Europe were this wheat was grown as a pure crop (Körber-Grohne 1987). The literature shows that Wahlitz is not the only site.

It may be concluded that the people of the Rössen culture knew three kinds of cereals as main crops : hulled wheat (emmer + einkorn), naked wheat and

naked barley. The people of the Bandkeramik culture, on the contrary, knew only one (or two if one does not wish to accept that emmer and einkorn were grown as a mixture). The new crops have to be regarded as a new cultural trait.

Because the barley and naked wheat, belonging to the cereals which originated in the Near East, were certainly not domesticated locally, the Rössen people must have obtained them from somewhere. Three sources are feasible :

1. The cereals were present in the Bandkeramik world but only in small, almost undetectable amounts. As the Rössen people chose different locations for their settlements, crops which up till then had been virtually unimportant might have had a chance. Moreover, there are indications that the climate was somewhat different (slightly more continental) at the time and this may have had an influence too. The different location and the different climate may have triggered the cultivation of the new crops naked barley and naked wheat.

This hypothesis may hold good for the barley, which is known to have been cultivated on the fringes of the Bandkeramik settlement zone. The barley-growing of the Rössen people may have developed out of this.

In the case of the free-threshing wheat the Bandkeramik is a much less likely source. The only archeologically well-documented and botanically certain instances known to me are four grains from Göttingen, some grain found at Hain, Kr. Borna near Leipzig, and a rather substantial amount in Sturova in Slowakia (Meyer and Willerding 1961; Nötzold 1982; Hajnalová 1983) (Fig. 3). This is not much if one considers the substantial number of sites that have been analysed. It is my personal opinion that the source sought for is not a Bandkeramik one.

2. A second possibility is that a new wave of crops came from the southeast. A review by J. Renfrew shows that naked wheat was indeed known in the Vinca culture, for instance (Renfrew 1979). However, the wheat seems never to have been a main crop. Naked barley is not common either. The "second wave of introduction" may not be the best candidate for an explanation for the introduction of the two cereals in a Rössen context.

3. If a culture growing naked wheat and naked barley is sought for, the Cardial and Epicardial cultures are the most obvious ones (Marinval 1988). The Rössen culture may have obtained the new crop plants by a "French Connection". The ultimate source may have lain in southern France. Such a connection has already been suggested for the poppy seed of the northwestern Bandkeramik (Bakels 1982). The difficulty is that the "go-betweens" are not yet known. So far, very few intermediates between the Epicardial and Rössen have been found. The only assemblage which might be something of this kind in the interesting assemblage of Gonvillars which exactly matches the Rössen crop (Villaret-de Rochow in Pétrequin 1974). There is also the naked wheat from the Grossgartach site Rosheim-Helmbacher (Erroux 1976). The Givry material from Belgium (Heim 1979) has to be placed slightly later than the classical Rössen sites.

When more becomes known of the contacts between the Epicardial and the Neolithic of central Europe, much may become clearer. As a matter of fact, nothing is known of the agriculture of the "precursors" of groups like La Hoguette, Limburg and Blicquy. The French Connection is therefore purely hypothetical. Still, it is a possibility which is interesting enough to be kept in mind.

Table 1. The frequency of the species found in the Rössen pits. Number of independent samples = 12.

Hordeum vulgare var. *nudum*, naked barley	12
Triticum aestivum or *durum*, naked wheat	9
Triticum dicoccum and *monococcum*, emmer and einkorn	9
Corylus avellana, hazelnut	4
Prunus spinosa, sloe	1
cf. *Rosa*, rose hip	1
Viscum album, mistletoe	1
Polygonum convolvulus	10
Chenopodium album	10
Lapsana communis	8
Bromus secalinus	7
Phleum sp.	5
Poa sp. *non annua*	3
Bromus sterilis or *tectorum*	2
Vicia hirsuta	2
Polygonum lapathifolium	1
Rumex acetosella	1
Rumex cf. *sanguineus*	1
Chenopodium rubrum or *glaucum*	1

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