

SOME THOUGHTS ON THE ORIGIN OF THE OPEN FIELD SYSTEM IN SWITZERLAND AND ITS DEVELOPMENT IN THE MIDDLE AGES

By
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land have never yet been systematically investigated or demonstrated – with the exception of Grosjean's field map in the Atlas of Switzerland – and the following postulates are therefore, at least in part, necessarily hypothetical and provisional.

This paper is concerned with one of the central questions of open-field research, namely whether the original forms of the subsequent open field systems in Switzerland can be identified and how the process evolved into its mature form. Another related question is that of the maximum territorial distribution, which remains as much unanswered for Switzerland as, according to Hildebrand (1980, p. 13), it does for the rest of Central Europe. The origins of the open-field phenomenon in Switzer-

1. Definitions

The fact that literary sources differ very widely in dating the origins of open-field systems is often simply the result of insufficient distinction being made between a 'three strip system' (*Dreifelderwirtschaft*), a 'three field system' (*Dreizelgenwirtschaft*) and the 'open-field system' (*Gewannflur*).

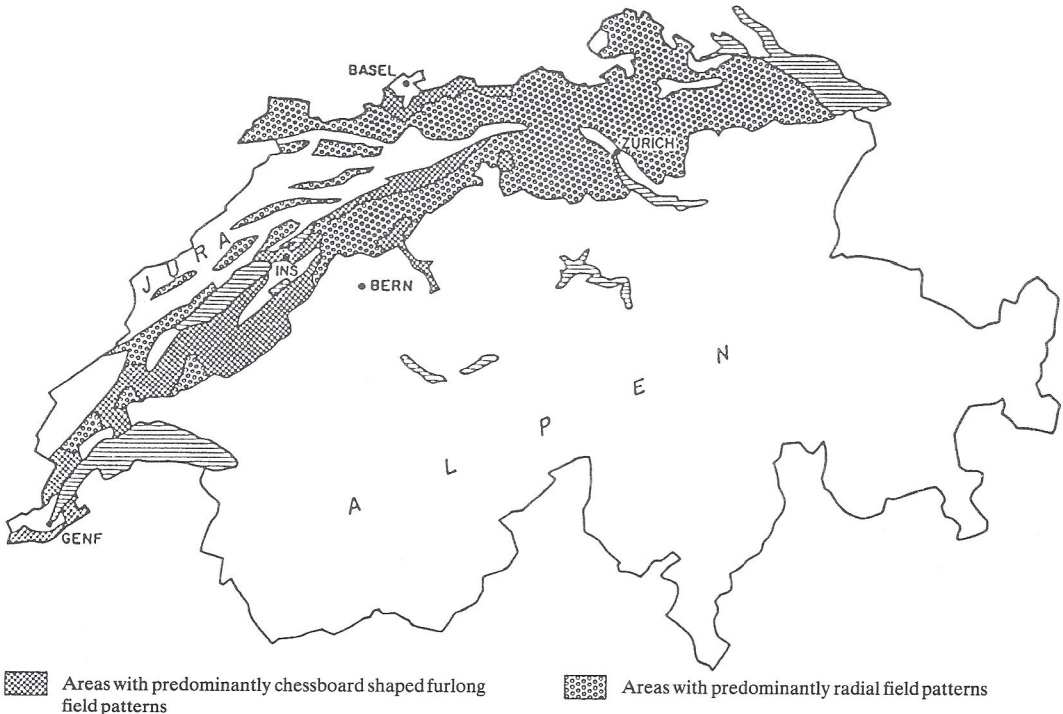


Fig. 1: The former open-field areas in Switzerland (after Grosjean, 1973, simplified).



a) Mannens 1770 (section)



b) Grafenried 1747 (section)

Fig. 2: Open-field systems in the Swiss Central Plain: Mannens (a) as an example of a chessboard-patterned open-field and Grafenried (b) as an example of a radial open-field (after Grosjean, 1973 and Zryd, 1942).

Hildebrand (1980, p. 7) has shown quite clearly that a three-strip rotation in no way amounts to a three-field economy. No more does a three-field economy necessarily indicate an open-field system. The need to draw this distinction has already been pointed out by such Swiss authorities as Howald in 1927 and Brühwiler in 1975.

By three-strip economy we mean simply the annual tilling of three arable fields in rotation, commonly the form of cultivation of one individual farm. The three-field system, on the other hand, implies several establishments with three sets of arable fields in common. Insofar as each farm possesses only one or a few parcels, generally still block-shaped, in one field, a system of land use with mandatory tillage is unnecessary. An open-field system applies only with intensive utilization of arable and pasture, small-scale parcelling and intensive conglomeration into furlongs, which in turn implies a well-organised village community.

2. The distribution of open-fields in Switzerland

Grosjean drew up his map of field patterns in Switzerland for the National Atlas in 1973, and the summary of the distribution of field systems in Figure 1 is based on this.

Grosjean ascertained field patterns on the basis of the new 1:25000 topographic survey. As more recent work in the Berne region has shown, three-field systems and furlong-field patterns already discarded in the 18th century consequently re-

mained unrecognised and undemonstrated. The map shows that open-fields were distributed almost exclusively in the lower part of the centre of the country, the plateau between the Alps and the Jura and also in the northern and eastern parts of the Jura and in the valleys of the Jura Chain.

Grosjean distinguished between areas with predominantly chessboard-shaped furlong field patterns and those with predominantly radial field patterns. The furlong-field patterns concerned are entirely of a block type, and no field patterns of the characteristic longitudinal type have so far been discovered.

An example of a chessboard-shaped field pattern and an example of a radial pattern appear in Figure 2. Mannens (Canton of Freiburg) is an example of a chessboard-shaped field pattern in western Switzerland, in an area of suspected former Roman boundary systems, Grosjean himself pointing out that field pattern continuity, and certainly not plot continuity, need not necessarily be responsible for this situation (Grosjean, 1985).

Grafenried (Canton of Berne) displays the radial road and track network frequently found in the central and eastern areas of the Central Plain, and the corresponding arrangement of the block field systems. Zryd had already reconstructed this pattern in 1942 by 'back tracing' (*Rückschreibung*), the plans and village land registers to the 16th century.

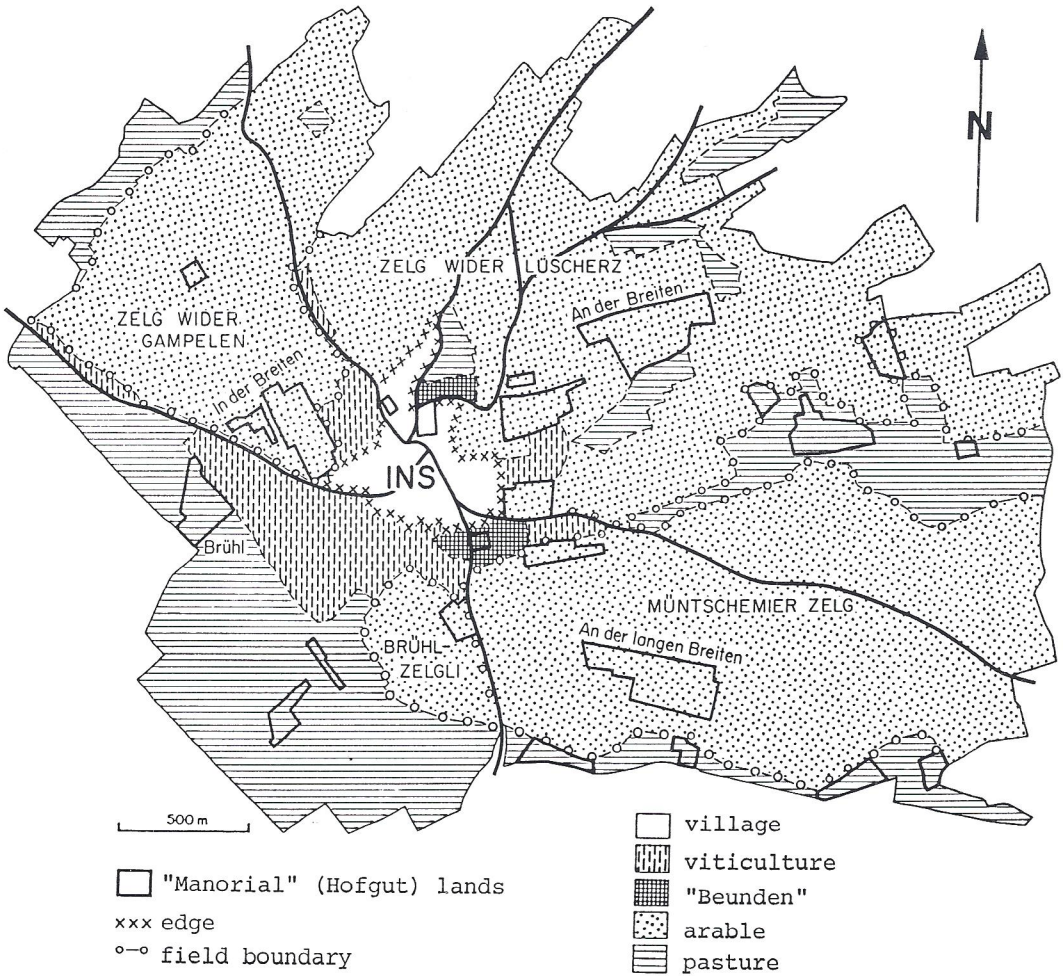


Fig. 3. The cultivated area of the open field at Ins (Canton of Berne) in the 16th century and the possessions of the demesne.

3. The origins of open-fields in the Erlach district

The central area of research around the Ins Settlement (see Figure 1) between the three central lakes of Neuenburg, Murten and Biel is characterised by formerly prominent open-field patterns. However, a particular feature of the area is the situation regarding language boundaries. In fact, Alemannic settlement did not extend as far as the three-lakes area, where German has taken root only since around the tenth century (Weigold, 1948, p. 153; Glatthard, 1977).

By resorting to back tracing (Krenzlin and Reusch, 1961), the excellent sources have allowed utilization, details of possession and ownership to be reconstructed accurately down to plot level for

the early 16th century in the case of a total of eighteen field patterns with an overall area of some 27 km². However, we shall not enter further into the origins of furlong field patterns in the 16th to 18th centuries as we are concerned with earlier developments.

'Manorial' (*Hofgut*) lands, which will be dealt with later, and areas of land use at Ins around 1530 are shown in Figure 3. We clearly recognise the radial arrangement of three fields, the 'Erlach' strip- and the 'Brühl' sub-field being cultivated on a rotation basis. The fields are very large, 132 hectares ("field near Gampelen" = *Zelg wider Gampelen* and "little Brühl field" = *Brühl-Zelgli*) 173 hectares ("Müntschemier field" = *Müntsche-*

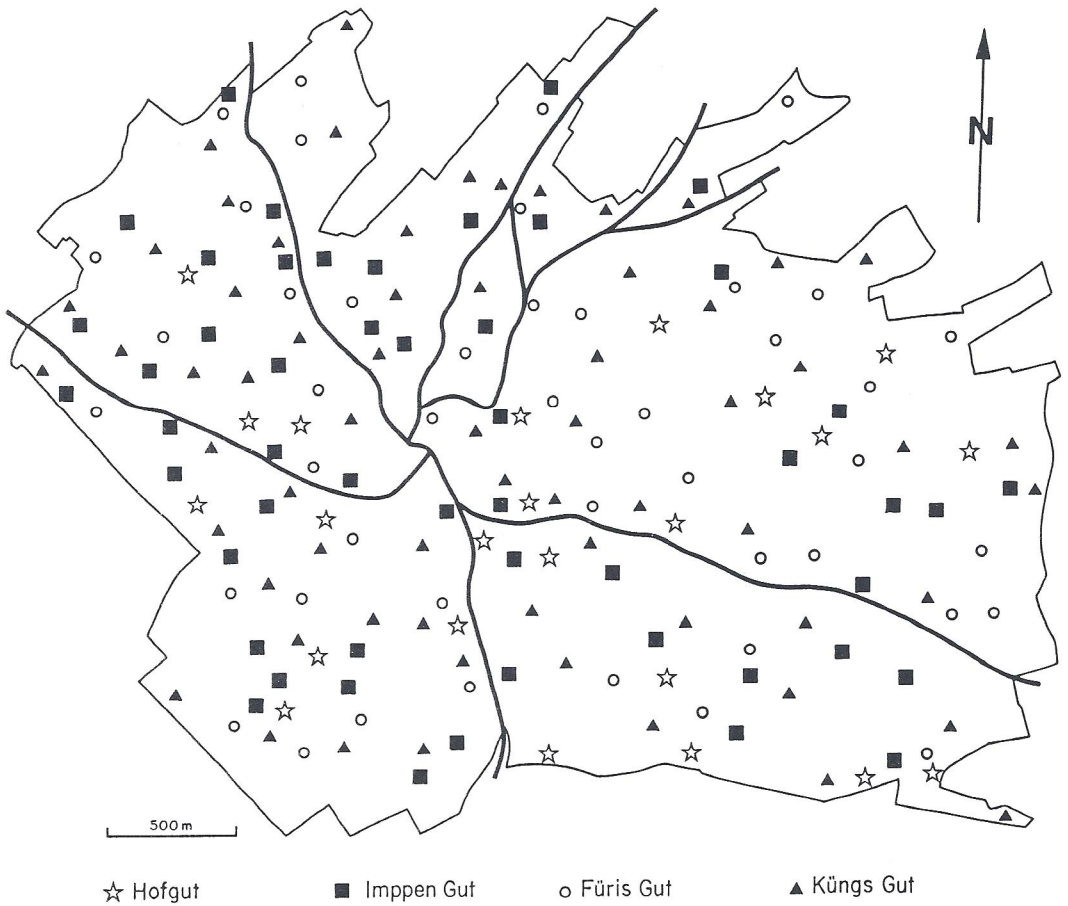


Fig. 4. The distribution of parcels in the possession of four large farmsteads in the Ins open field (Canton of Berne) in the 15th century (cf. cultivated area in Figure 3).

mier Zelg) and 206 hectares ("field opposite Lüscherz" = *Zelg wider Lüscherz*), though the largest differs from the smallest by as much as 56 %. This is a fact which has already been frequently noted and described (e.g. Gallusser, 1959, in the case of the Laufen Jura). In addition, parcelled pasture, the relatively large vineyards and the *Beunden* are shown. There was no common land in the strict sense as the large bog area immediately adjoining was used for firewood and for grazing.

While we find a highly stable situation in the land use of the Ins region in the 16th to 18th centuries, major changes took place during this period in utilization in the eastern open-fields in the area of the Lower Emme (Heri, 1980), and individual lands in north eastern Switzerland

underwent major changes even in recent times (Egli, 1976).

We cannot deal further with the *Beunden* here, although, like the *Breiten* and *Brühle* to be explained in due course, they may be in the nature of 'fossil indicators'. We know from the research by Leister (1979), that the oldest *Beunde* field names in the area investigated have only been handed down since the 17th century and especially because new *Beunden* were still being put down in the 18th century. This happened in Erlach, for example, shortly after 1764 on former common land (Moser, 1987, p. 12).

The mapping of the larger economic units in the 15th century shows the extraordinary extent to which farming establishments are scattered

throughout the field system. The names of the farms originate from the land registers of the 16th century but point to older establishments. In addition to the description of the farms, the registers frequently also mention *Schupposen*. Both names were clearly used synonymously as no differences can be found. On the other hand, nowhere throughout the area researched can *Hufe* be found: there is no mention of them at all, not even in the older documents. It must be noted, however, that sources predating the 13th century are very scant, which itself is possibly also an indication of the absence of any more substantial landowners, a problem which will be discussed later. In particular, this group of pointers and precedents so important for open-field pattern research is lacking throughout the Bernese central plain.

Surprisingly, manorial estates and consequently landownership in the 16th century were as broken up and frequently scattered parcel by parcel as individual agricultural units, i.e. the possession of the land. Not only the Benedictine Monastery of St. Johannsen, which was founded in this region around A.D. 1100 and in the course of the next 150 years developed into one of the largest landowners in the Swiss Central Plain, but then declined very rapidly and had to pledge many of its properties, but also many estates or parts thereof paid tribute to Erlach Castle, i.e. a landowning family which apparently became established in the Swiss Central Plain only in the 11th Century and from which the subsequent Dukes of Neuenburg, one of Switzerland's leading noble families in the later Middle Ages, originated. In addition to the relatively large landlords, there were also a number of other property owners (ecclesiastical benefices, male-line fiefs, hospice properties and the like) so that many plots had to pay land rents three or four times over, which gave rise to almost inconceivable difficulties for the farmer when it came to practical application! Altogether, by the 15th century we already have a largely broken up structure of landownership, a process to which Pfaff, amongst others, has referred in connection with the agricultural depression of the late Middle Ages (Pfaff, 1976, p. 20).

The 'manorial parcels' with *Breite* field names shown in Figure 3 as broad blocks some 500 meters in length and 200–300 meters wide were as greatly broken up around 1530 as other properties. Only the entries in the village land registers indicate that they originate from the 'manor' of Ins (*curia de Anes*). The block parcels were repeatedly di-

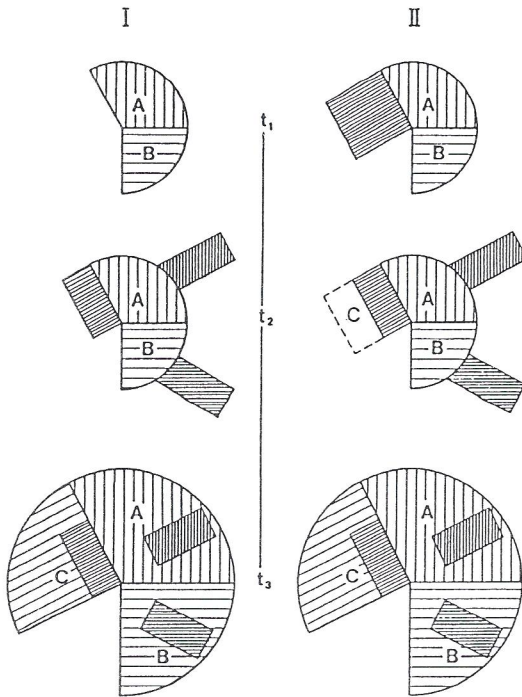
vided lengthways at an earlier stage, which produced narrower parcels up to 500 meters in length. These extended parcels were then again divided across at a later stage, which led to the characteristic block furlong field pattern of the 16th century.

The mapping of the 'manor' in the Ins open-field showed not only that each of the three fields contained a block parcel of eight to nine hectares in size but that each bore a field name with *Breite*, each being precisely distinguished and designated as "In the Breite" (*In der Breiten*), "Along the Breite" (*An der Breiten*) and "Along the long Breite" (*An der langen Breiten*). The rough pasture around the manor also lay "In the Brühle", without, however, being as precisely localized into parcels as the *Breiten*. In 1926 Victor Ernst pointed out the close relationship between the local demesne and the field name in *Breite*. However, he inferred an origin long before the introduction of the three-economy, although in his forty supplementary manorial documents he identified a *Breite* on each of the three fields on sixteen occasions and two *Breiten* in the case of five other demesnes (Ernst, 1926, p. 124 et seq.).

Before dealing further with *Breiten* and *Brühle* as evidence of a three-strip economy, the possible development of the open field pattern around Ins is shown by means of a model in Figure 5.

As at Ins, one *Breite* lay directly on the edge of the village while the other two were around 1,000 meters further away, the manor in Model I was so arranged so that an 'open-field' already existed in the area of fields A and B (in Period t₂). Two of the three arable field plots of the manor had then to be arranged beyond these fields, only the third *Breite* lying directly by the settlement; from this the third field then developed. This is possibly a first indication of a former two field system (in Period t₂). Model II presupposes an originally enclosed 'manorial' parcel close to the settlement. At the same time, or later, a two-field system also developed. In Period t₂, the manorial arable was divided up, two arable parcels having then to be rearranged outside the existing two fields. The result in both models is the same for Period t₃: a three-field system, each with a block-shaped manorial parcel (See Figure 3).

Since, on the one hand, a three-field economy was certainly possible within the enclosed area worked by an individual farmstead, subsequent division of the arable would not have been necessary and, in particular, the change would have meant a substantial lengthening of the road to



▨ "Breite"-parcels of the manor ("Hofgut")
A,B,C fields

Fig. 5. Two models (I and II) of the development of the Ins open field (Canton of Berne) and the arrangement of the manorial parcels.

work, which is hardly likely in the case of the demesne. On the other hand, we may assume with a broad margin of certainty that the two largest landowners, the Monastery of St. Johannsen and Erlach Castle, emerged only in the 11th century, so that the manorial tenure was probably also only introduced at this period. That it once belonged to "Buchardus, miles de Anes" (Fontes Rerum Bernensium I: 484) mentioned in 1189/90 is quite probable but not proven. According to Bader, however, what we must look for amongst the stewards is not so much a noble knight as a stalwart tenant or yeoman entrepreneur (Bader, 1973, note p. 30).

By and large, we tend to assume that manors are newly founded as three-strip economies, i.e. on Model I. Such an establishment would therefore also act as an innovative centre for the three-field system. For the region of the three central lakes with the large open-field of Ins, this would mean

that the period of two-strip or two-field patterns (t_1) could be ascribed to the 8th–10th century, the period in which the manor was formed, and the expansion to a three-field system (t_2) to the 11th, or the 12th century at the latest, and the last extension to the open-field pattern may be assumed as having taken place in the 14th–15th century (t_3). There are no further indications for this region of abandonment of fields or villages in the late Middle Ages (Egli, 1983).

4. *Brühle* and *Breiten* as evidence of a three-strip economy.

Just a few kilometers away from Ins, in the Gals field system (Figure 6), we also found the three *Breiten* and the *Brühl* of the demesne already evidenced in 12th century documents.

The three arable plots – similarly distributed over the three later fields – here lay very close to the village boundary. The original arrangement as a three-strip farmstead appears even more probable in this case than at Ins, as any subsequent redistribution into three fields, as assumed by Bader (1973, p. 157), would hardly have been possible so close to the settlement unless the structure of possession within the field system was radically changed. There is no basis for such an assumption, which would have meant quite drastic measures by the landowners and a planned reallocation of property. As at Ins, the three *Breiten* parcels were unequal in size and were of irregular shape; there are no regular shapes, either in the parcel layout or in the distribution of possession, or in the rest of the field system either. The manor of Gals was then probably rearranged as a single farmstead without an open-field already having existed. The function of this farmstead must primarily have been an economic one, acquiring the legal one of feudal manor only later.

Bader in 1973 does not mention that any *Breiten* at all demonstrably existed before the 13th century, while on the other hand he refers to field patterns including more than one *Breite*. In particular, he refers to the evidence put forward by Victor Ernst, already mentioned. Within our area, only in the Canton of Berne could we find at least ten open-field patterns with three distinct *Breiten* amongst the as yet unpublished collection of cantonal place names, while we know of two different *Breiten* in 39 other open field patterns. Due account must be taken of the inconsistency frequently found in field names. For example,

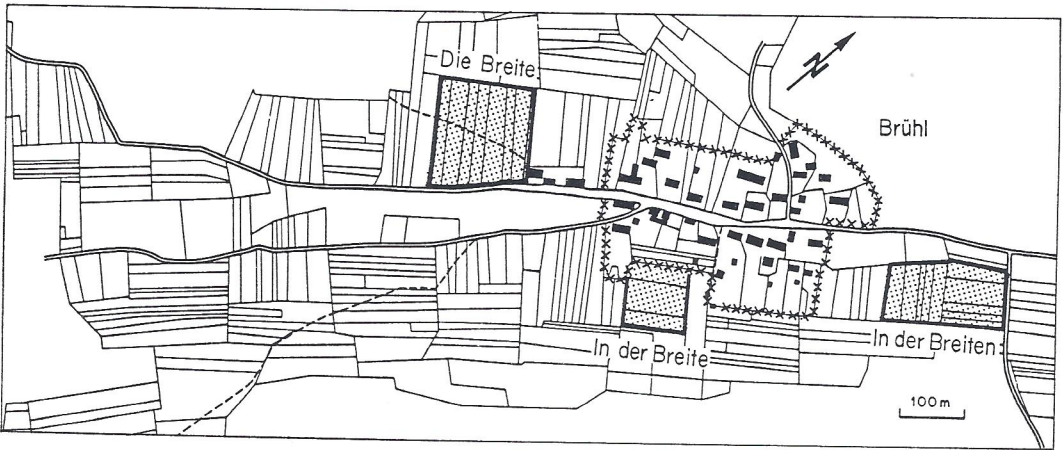


Fig. 6. The three block-shaped *Breiten* and the *Brühle* of the manor in the Gals open field (Canton of Berne).

about one third of all field names within the central area of investigation, the barony of Erlach, were changed during the 16–18th centuries. In addition, where the field names were not precisely identified and plots not exactly localised, various *Breite* names were confused with each other.

Although we do not wish to refer back to the opinions put forward by Buck in 1931 and Vollman in 1926 that the three *Breiten* are equivalent to the three fields of the Alemannic individual farmstead (Buck, 1931, p. 36; Vollman, 1926, in Muller, 1938 et seq. p. 57), we believe that we have demonstrated the relationship of the three *Breiten* with the three-strip or three-field economy.

We cannot therefore accept the conclusions of Bader that *Brühl* and *Breite* offer a glimpse of early forms of land use which precede the three-field economy – at least in respect of the central Swiss Plain – and even less so the theory of Victor Ernst whereby the origins of the pre-feudal manor with the *Brühle* and *Breiten*, may be dated back to long before the 6th century.

5. Two-strip systems as precursors of the three-field systems

In our open-field hypothesis for Ins we have already pointed to the long debated possibility of a two-field system as a precursor of the three-field system.

Yet more evident, however, is the field arrangement of the two adjoining field systems at Ins

shown in Figure 7, namely Gampelen and Gäserz. Both locations had two fields adjoining the settlement no later than the 15th century, the third lying several hundred meters away. This asymmetrical situation was probably the result of the subsequent creation of the third field. These two-field systems may be directly connected with extended viticulture, of which there is documentary evidence at Ins already in 1009 (Fontes Rerum Bernensium I: 292–293); it has played an important role in Gampelen right up to the present century. At Gäserz we suspect that the terraces in the steep wood to the north of the hamlet also originate in early viticulture which was, however, abandoned in the 16th century. In 1967, Abel pointed to the particular function of special crops, especially wine-growing, in areas with demonstrable two-field systems, as the particular amount of work involved and the insufficient input of fertilizer permitted only half the field area to be cultivated. In addition, wine-growing made good the loss of income from cereals.

As the area under investigation was still settled by a Romanised population in the early Middle Ages – possibly only from the end of the 6th century, as the early Medieval burial ground discovered in April 1987 directly beside the church at Ins and the finds already made earlier at Erlach and Gals have confirmed (“Der Bund”, 3.6.87.) – the population must have emigrated into present-day western Switzerland from the area which the Burgundians began to settle from the 5th century, or earlier. Amongst them, viticulture evidently

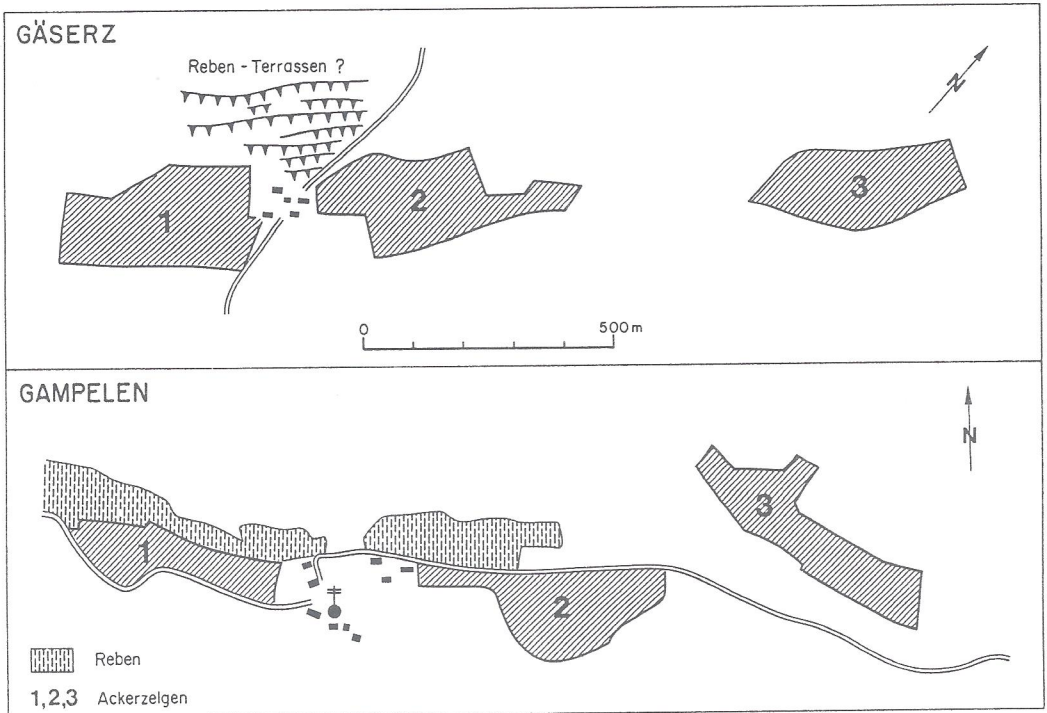


Fig. 7. The asymmetrical position of the ploughland parcels at Gäsersz and Gampelelen (Canton of Berne) around A.D. 1500 as an indication of former two-field systems.

played an important role, as we know from the *Lex Burgundionum*.

The conversion of two-strip systems to three-strip or three-field systems may have been necessary as a result of an expansion in cereal crops which could be connected firstly with the large number of towns being founded in the Swiss Central Plain and, secondly, with the favourable climate in the 11th to 13th centuries. Whether the feudal occupation or re-occupation of this region also had a direct influence on the creation of new fields, e.g. through the introduction of *Hofgüter* (manors) is certainly likely but cannot be proved. Furthermore, strong influences from the eastern area of Alemannic settlement may have played an important part.

6. Conclusions

If we summarise our knowledge of the development of open-field systems in Switzerland in the form of a model, we can distinguish between the three types illustrated in Figure 8.

In the central area of investigation, the Bernese Lakeland, a two-field system with block parcels may be assumed (Type II). Viticulture was quite probably an important factor, as a special use of the land. These fields were subsequently supplemented with a third field which was initially divided longitudinally, the short field patterns resulting subsequently through cross-division. In the central part of the region we must similarly assume primarily a three-field economy for the manors now recreated as individual farmsteads, which developed further into more or less radially arranged three-field systems through the division of these individual establishments (Model III). An analysis of the map shows that this process must be assumed chiefly in the eastern part of the Central Plain, with the initial settlements not always being individual farmsteads but frequently, already, group settlements. We know from the Canton of Berne that by no means all three-field systems developed into open fields.

In Western Switzerland, on the other hand, the chessboard-patterned open fields may have de-

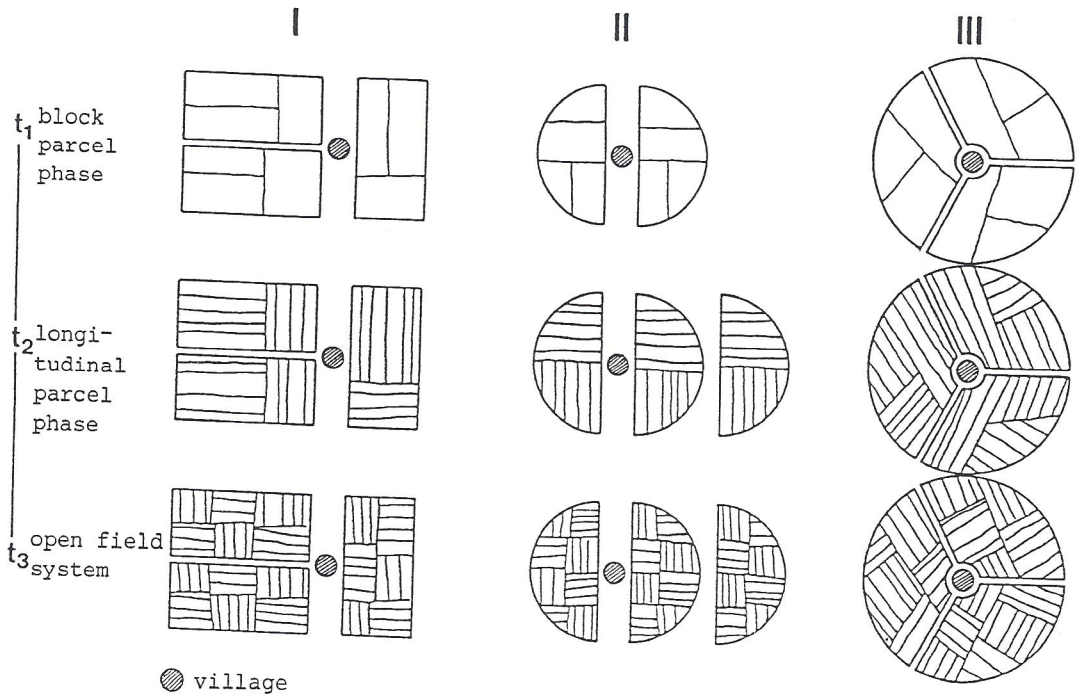


Fig. 8: Models of open field creation in Switzerland. I: chess-board-patterned open fields, predominantly in the western Central Plain. II: two-field systems as precursors of the three-field systems. III: radial open-fields, predominantly in the central and eastern Central Plain.

veloped as more or less rectangular clearings, which possibly go back to Roman antecedents (Model I). Since, however, few signs have been found in the parcelling of a Roman boundary system of the kind that can still easily be seen in northern Italy, for example, an interruption in the open-field pattern must be assumed. Whether the newly-charted fields were already arranged in three-strip form or initially only with two or even one single strip, we do not know. The necessary research has still to be undertaken. We certainly cannot regard even these systematic fields as planned furlongs. Similarly, the longitudinal parcel phases are, for the present, still hypothetical as far as western and eastern Switzerland is concerned; they have been repeatedly identified with certainty only in the central part of the Central Plain.

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