

NON-CIRCULAR MONUMENTS IN THE SOUTHERN DUTCH URNFIELDS

G. J. VERWERS

The urnfields in the southern part of the Netherlands, which mainly belong to HaB and HaC/D, once consisted of a great number of low tumuli, now only recognisable by their circular ditches. Among the circular ditches, elongated ones have been recorded. There exist two types. The Long Ditches of Riethoven type, with average measurements of 15.5×5.5 m, almost always have a central interment and are therefore regarded as oval grave monuments. For the Long Ditches of Goirle type, which frequently occur in groups and are generally much longer and narrower than the Riethoven type, the use as agricultural fields is suggested. These fields are supposed to have had a function in the funeral rite.

Introduction

At the end of the fourteenth century B.C. waves of renovations, both spiritual and material, originating in the Balkans, swept over Europe. Urnfields being the most obvious and rather overestimated phenomenon of these renovations, the newly created cultures were labelled '*Urnenfelder Kulturen*'. They represent groups that accepted new customs and techniques, while in the meantime preserving old traditions. Southern Germany and Switzerland saw the development of W. Kimmig's '*Mitteuropäische Gruppe*', in which the older, local traditions became so much incorporated that he could distinguish provinces like the '*Rheinisch-Schweizerische Gruppe*' and the '*Unterrheinisch-Schwäbische Gruppe*' (Kimmig, 1940 and 1964).

Both of these groups exercised their influence on the Middle Rhine region, while in its turn this region passed on modified *Urnenfelder* traditions to the Lower Rhine, including the southern Netherlands.¹ Here the local Bronze

Age population had already adopted the rite of cremating their dead and depositing the ashes in an urn. The new influences from the south resulted here in the creation of urnfields, wherein however each urn was covered with a small barrow, so keeping alive the local Neolithic/Bronze Age tradition. Another proof of renovation is the pottery now used as urns. This includes vessels that have good parallels in the southern German and Swiss *Urnenfelderkultur*. The earliest ones among them can be dated to HaB indicating that the beginning of the urnfields in the southern Netherlands is about 1000 B.C.

Although there are clear indications that the Lower Rhine people were influenced by the *Urnenfelderkultur*, these influences came through so modified, and in the newly developing culture the old traditions were incorporated so strongly, that this new culture had only a distant similarity to the pure *Urnenfelderkultur*. This is the reason why W. Kersten proposed the name *Niederrheinische Grabhügelkultur* (Kersten, 1948). It came into existence during HaB and

1. For the different way along which the northern Dutch urnfields came into existence: de Laet & Glasbergen, 1959 and Waterbolck, 1962.

carried on probably well into the HaD period, or even later. The urnfield tradition with the construction of low barrows continued to be in vogue during the whole of this period. Translating the Dutch word *urnenvelden* into the German *Urnenfelder* therefore causes much confusion as there the *Urnenfelderkultur* ends at the end of the HaB period.

Here only the Rhine is indicated as a road by which the *Urnenfelder* influences were disseminated to the North but Kersten already saw northeastern France and Belgium as another possible route. We would like to add Westphalia. However we feel that a discussion on these problems would be out of order at this time.

Non-circular monuments

During more than half a century accurate maps of urnfield excavations have been produced in the southern Netherlands. M. A. Evelein and J. H. Holwerda at the beginning of this century started a tradition which was maintained by many archaeologists ever since. While providing an interesting picture of the developing excavation methods, their plans together show what are the characteristic features of the southern Dutch urnfields. Optimum soil conditions such as sandy sub-soil without gravel, play a large part in the preservation of the structural features of the Dutch urnfields. In almost all urnfields the circular ditches can be seen to surround the interments. Digging the ditches must at the same time have provided a boundary to and the material for a small barrow that was built over the urn burial.

In addition to circles, non-circular ditches almost always appear. They have a considerable variation in shape. In this group the long and narrow Long Ditches of Goirle-type are one extreme, while the small rectangle at Someren is another (Verwers, 1966b; Modderman, 1955). These differences in shape are paralleled by differences in nomenclature. '*Lange bedden*' (long bed), 'oblong bed', 'elongated lay-out', 'oval monument', etc. are names that have been used. In several reports the presence of these non-circular ditches has only been mentioned.

In a few instances explanations regarding their significance have been offered, varying between sepulchral monument and agricultural field.

However their different shapes make questionable whether they should be grouped together. Moreover different dates can be assigned to them.

In the present study the non-circular ditch systems that have been recorded in southern Dutch urnfields are reviewed and compared with similar phenomena in other regions. From the evidence thus presented the possibility of classification, dating, and interpretation may be deduced.

Riethoven: In 1909 M. A. Evelein started an excavation near Riethoven, southwest of Eindhoven (Prov. Noord-Brabant). The investigations were completed in 1913 by J. H. Holwerda. The maps going with their reports show an urnfield with a great number of circular ditches (Evelein, 1909; Holwerda, 1913). At two places in the urnfield a non-circular ditch came to light. The ditch to the east, described by Evelein as an 'elongated lay-out' is about 23 m long and 6.5 m wide. At one end it touches a circular ditch. Almost in the middle of the long axis an urn with *Kerbschnitt* decoration had been placed. The second oval monument, an 'oblong bed' according to Holwerda, measuring 19 × 7 m, did not offer any associated finds. It touched circular ditches. Many of the urns deriving from the Riethoven urnfield are to be dated in HaB. So is at least one of the oval monuments. Both authors give no explanation as to the purpose of these monuments.

De Hamert: North of Venlo (Prov. Limburg), near the German border the urnfield of 'De Hamert' is situated. It has been excavated by J. H. Holwerda (Holwerda, 1914). The tumuli, which were still visible at the surface, had all been surrounded by circular ditches. Many urns were still in place. Most of them belong to the HaC/D period. At two places in this cemetery 'quadrangular lay-outs' were discovered. They consisted of two long ditches running parallel to each other 3.5 m apart. Both ends curve

toward each other, thus forming an oval rather than a 'quadrangular' enclosure. Their length was 30 and 37 m respectively. The western 'lay-out' contained sherds with 'incised concentric half circles'. In the second 'lay-out' the lower part of a smooth urn, containing cremated bone, was discovered. The exact location of both finds is unknown. Holwerda believed both non-circular monuments to be contemporary with the oldest tumuli at De Hamert. He does not explain their meaning.

Goirle: In 1924/25 A. E. Remouchamps discovered several long ditches in the middle of an urnfield at Goirle, south of Tilburg (Prov. Noord-Brabant). From his plan, the presence of 3-5 long oval enclosures may be deduced (Remouchamps, 1926). They have been constructed against each other. Their length is estimated at about 40 m and their width is 3-5 m. No central interment was found. Close to the ditches two urns of HaB date had been placed. Against the long ditches, circular ones were visible. Remouchamps describes the long ditches as '*langwerpige cultusruimten*' (elongated cult enclosures), and refers to the publication of the cemetery at Rijssen (Holwerda, 1925). He believes the ditches to have held a wooden palisade.

A second type of non-circular ditch contained a HaB bi-conical urn as the central interment. It was later covered by a barrow with a circular ditch, built over a HaC/D urn. Measurements of the oval ditch were 20×6 m. Also, this ditch once was the foundation trench for a wooden palisade, according to Remouchamps.

To the south of this excavation an additional investigation was carried out in 1965 (Verwers, 1966b). Again a group of 5-7 long enclosures with average measurements of 60×3.5 m was un-earthed. They were contemporaneous with the circular ditches that were constructed against them. No central interments inside these enclosures have been recorded. From the filling of the ditches came charcoal and sherds. The latter dated these monuments to the HaB period. C_{14} measurements of the charcoal gave the following dates: Goirle 3 from the filling of a long ditch: 870 ± 50 B.C. (GrN-4919). Goirle

8 from a posthole near a long ditch: 830 ± 50 B.C. (GrN-4920). Goirle 29 from the filling of a circular ditch adjacent to the long ditches: 920 ± 50 B.C. (GrN-4921).

Vlodrop: Southeast of Roermond, the village of Vlodrop (Prov. Limburg) is situated. There F.C. Bursch dug an urnfield in 1931 (Bursch, 1936). To the east of the main concentration of circular ditches, a group of 'long beds' was discovered. At the time of the excavation they were visible as 'elliptical elevations'. Four parallel enclosures, lying adjacent to each other and bordered by ditches showed up after the topsoil had been removed. Bursch described their measurements as about 34×8 m. The unpublished plan of this excavation, which is kept at the National Museum at Leiden, informs us that the width of the enclosures varies between 5 and 7 m. Moreover only the northwestern ends have been found. In the opposite direction the long parallel ditches are cut by a road. This means that the actual length of these monuments was at least 34 m and probably longer. Bursch observed that in the middle of the long enclosures the soil had a gray colour, 'as if it had been frequently walked over'.

On the four long axes urns had been deposited. Three urns belong to the type with bi-conical shape and cylindrical neck and were also decorated in *Kerbschnitt* technique. The fourth urn is related to the German *Henkeltasse* and has the incised zigzag decoration often found on these cups. As *Kerbschnitt* urns were also discovered in the other part of this urnfield, Bursch concluded that apparently the 'long beds' belonged to the urnfield. He does not give an explanation for these 'beds' but dates them to the earliest phase of the Dutch urnfields. This agrees with the dating for the *Kerbschnitt* urns, which can be assigned to HaB.

Best: During his excavation in 1933/34 of the urnfield at Best, northwest of Eindhoven (Prov. Noord-Brabant), W. A. Willems discovered several oval ditches, situated between circular ones (Willems, 1935). At one place two elongated oval enclosures, 49×4.5 m, were con-

structed adjacent to each other. One of them had a small pit with cremated bone near the long axis. Against this pair of ditches, circular ditches were situated. In a second long monument, 34×4 m, a bowl of smooth pottery with cremated bone had been placed almost on the long axis. An incomplete (empty?) pot with a decoration related to the *Kerbschnitt* technique, stood almost adjacent to the outer side of one of these long ditches. Willems indicates these long narrow ditches to be 'oval elongated ditches', which he dates before the surrounding circular ditches. He does not consider them to have been constructed to enclose interments.

Three other non-circular ditches measured 19×6.5 , $10? \times 5$ and 11×6 m respectively. The first one touched the circular ditches at two places. It was situated in the western part of the urnfield, where the only deliberately roughened urns in this cemetery had been buried, thus dating this part to HaC/D. Eccentric to the second monument, a small pot with two handles was found. This long ditch intersected with a circular one without a central interment.

Knegsel: The urnfield at Knegsel, west of Eindhoven (Prov. Noord-Brabant) was investigated in 1934 by W. C. Braat (Braat, 1936). In addition to a great number of circular ditches, about 13 oval ditches were brought to light. Their length varies between 15 and 22 m and their width between 4 and 6 m. In the northwest part of the urnfield they are grouped together, elsewhere they lie separately. Adjacent to the oval ditches, circular ditches have been constructed, which seem to intersect the former at a few places. Remnants of two (three?) single or multiple postcircles represent the oldest monuments in this cemetery. They underlie the urnfield ditches. At one place, one of the centres of an oval ditch coincides with the centres of a postcircle and a circular ditch. The chronological sequence of these three monuments cannot be reconstructed with certainty. In another oval ditch, an urn was discovered on the long axis. An interesting monument is a third oval ditch. Parallel to the inside of this ditch, which measures 19×5 m, posts have been placed.

Braat reconstructed this lay-out as a 'hut', with the roof resting on the posts, while the ditch could have served as foundation trench for a palisade. As to the meaning of this and the other 'long, oval beds' Braat does not give an indication. The majority of the urns excavated in this urnfield belongs to the HaB period.

Veldhoven: In 1948 excavations uncovered part of an urnfield near Veldhoven, southwest of Eindhoven (Prov. Noord-Brabant). Here also several elongated ditches were mapped (Modderman, 1966). Two single enclosures measured $(26?) \times 3$ m and 36×6 m, respectively. In two places, removed from the axis, the first enclosure had some sherds and the fragments of a small pot. In the second enclosure two small pits with cremated bone were discovered on the axis. Four or five enclosures were grouped adjacent to each other. They resemble very much the Goirle type of long ditches. As the rounded ends of the ditches were found only in the northeast, their length must have been over 38 m. The average width was 4-5 m. Cremated bone lay inside the enclosures only in one spot. Both against the single and the multiple systems of long ditches, circular ditches had been constructed. Small disturbances in the centres of these circles indicated, that the interments had been collected previous to the excavation. Sherds with *Kerbschnitt* decoration date at least part of this urnfield in the HaB period. The pollen-content of the long ditches indicated an agricultural use for the enclosures. H. T. Waterbolk dated them to the Iron Age. He thought it unlikely, that they were older than a few centuries B.C. (Waterbolk, 1954).²

Sittard: During the excavations of the Band-ceramic settlement at Sittard (Prov. Limburg) in 1953/54, P. J. R. Modderman discovered an 'elongated oval ditch' of 6×13 m. In its long axis there was an urn with cremated bones and a small pit with cremated bones (Modderman,

2. Dr. W. van Zeist at Groningen recently informed us that he now prefers a dating between 1000 and 500 B.C. for the Veldhoven ditches. This date places the ditches both at Veldhoven and at Goirle in the same period.

1958/59). This monument was described under the heading 'Non-bandceramic antiquities'.

Toterfout/Halve Mijl: In his study on the barrows in the 'Eight Beatitudes', south of Eindhoven, W. Glasbergen describes an oval monument in connection with barrow 22A (Glasbergen, 1954). This barrow had been surrounded by a double postcircle, which Glasbergen dates to Early or Middle Bronze Age, and certainly before the Iron Age. The northern long ditch of the east/west orientated oval, cut through the postcircle and the southern ditch touched it. The plan does not give the chronological relation between the barrow and the oval ditch. This oval ditch (14.5 × 4 m) was interpreted by Glasbergen as 'the boundary of a prehistoric arable field of the "ridge" type'. 'The field must thus have been later than the postcircle'. Part of a second ditch was found nearby.

Someren: On a camping ground near Someren, southeast of Eindhoven (Prov. Noord-Brabant), P. J. R. Modderman made a preliminary excavation in 1953 (Modderman, 1953). From the centre of several circular ditches came a number of urns, both with smooth and with deliberately roughened surfaces. The plan shows one rectangular ditch, 8 × 2.5 m. On its long axis near the southeastern end, an urn with intentionally roughened surface had been buried; near the opposite end is a posthole.

Valkenswaard: An urnfield south of Eindhoven, at Valkenswaard (Prov. Noord-Brabant) was excavated by H. Brunsting in 1954 (publication in press). Circular ditches lay against elongated ditch systems. In a 34 m long oval enclosure, the ditches widened near one of the ends before turning toward each other, the result being a kind of elongated keyhole. Sherds from the filling of this monument are of a HaB date. They represent half of a bowl. Two other long ditch systems measured 36 × 5.5 and 18 × 4 m. There are no finds datable to them. In the northern part of the excavated area, fragments of long ditches were discovered. The Valkenswaard urnfield came into existence during HaB, and continued into HaC/D.

Laagspul: South of Tilburg (Prov. Noord-Brabant) the village of Hilvarenbeek is situated. This municipality includes the hamlet Laagspul, where part of an urnfield was investigated in 1957 by P. J. R. Modderman (Modderman, 1957/58). Of an elongated enclosure only a part was unearthed. Against the long ditch circular ones had been laid out. Their fillings provided fragments of pots, among which were three small cups with handle. Only a half of two of these cups was present. The sherds of a so-called *Lappenschale* (see e.g. Kersten, 1948), together with the other pottery dated this urnfield to HaC/D, according to Modderman. This dating was then supported by a C₁₄ measurement of charcoal from the filling of the long ditch, giving at that time 650 ± 60 B.C. As was expressed before (Verwers, 1966b) a relation may be present between the handled cups and the German *Henkeltasse* of HaB date. The same period is indicated by the latest result of the C₁₄ dating mentioned above: 900 ± 50 B.C. (GrN-1764). The *Lappenschale* does not contradict this, for although certainly used during HaC/D, it possibly came into existence before.

Veldhoven: The plan of the so-called '100th Barrow' near Veldhoven, southwest of Eindhoven (Prov. Noord-Brabant), reveals two rectangular ditches, that must have been dug prior to the construction of this barrow (Modderman, 1966). The enclosures lie against each other, the measurements are 9.5 × 5 m for one of them, the other being too fragmentary to be delineated. The former had a pit with cremated bone in its centre.

Bennekom: Although not situated in the southern Netherlands, we mention the group of four parallel elongated enclosures at Bennekom (Prov. Gelderland). They were discovered during the excavation of an urnfield with circular ditches (Bursch, 1933). Their length and width were 23 and 2-3 m, respectively. It is interesting that their length was determined by the presence of patches with gravel at both ends of the enclosures. The ditches are not dated. Bursch assigned to these 'long beds' a roll in the cult of the dead.

Berghem: East of 's-Hertogenbosch (Prov. Noord-Brabant) in the hamlet 'Zevenbergen' near Berghem, a small tumulus was excavated (Verwers, 1966a). Below the circular tumulus an oval ditch with parallel rows of postholes was revealed, measuring about 25×6 m. On its long axis fragments of bone and of sherds with incised decoration were discovered. Whether this find was still in its original position was uncertain. As neither the tumulus nor the oval monument offered any further finds, dating was impossible. (Preliminary C_{14} dating: 580 ± 50).

Classification and dating

The 15 excavations mentioned above provided over 30 single or multiple systems of non-circular ditches. Leaving aside the keyhole shaped monument at Valkenswaard, the ditches all had an oval shape, which varied in length and width. On the average, the short monuments have a greater width than the long ones. This tendency is also indicated by the index of length : width. Indices between 2 and 4, (eleven examples extant) all belong to ditches shorter than 23 m. The average length in this group is 15.6 m, the average width 5.5 m. With one exception the remaining non-circular ditches (eight examples) have indices of 8 and up. Their length is over 30 m with an average of 42 m. The average width in this group is 3.8 m.³ Except for one at Veldhoven (index 6), there are no monuments known to us with indices between 4 and 8. On morphological grounds we can thus distinguish two groups: long and narrow ditches and short and wide ditches. The first group includes several examples with multiple systems. Although its total length is unknown, the multiple ditch system at Vlodrop may be included in this group because of its similarity with the long ditches at Goirle. Single monuments are the rule in the second group (with the exception of the two small rectangular ditches below the '100th Barrow' at Veldhoven and a few oval ditches at Knegsel).

Dated non-circular monuments are very few in number. In the 'long and narrow' group the 3. The length of the ditches at Bennekom (23 m) seemed to be determined by soil conditions.

ditches at Goirle received C_{14} dates of 870 ± 50 and 830 ± 50 . These facts and the archaeological evidence indicate these ditches to be of HaB date. So are the ditches at Vlodrop and the keyhole shaped ditch at Valkenswaard. The Laagspul ditch fragment was C_{14} dated to 900 ± 60 B.C., placing it also in HaB. At Best the ditches belonging to the long group were surrounded by the HaB part of the urnfield. At De Hamert two single ditches of the long type are undated but were discovered in a HaC/D urnfield. The ditches at Veldhoven and Bennekom are undated. From this evidence it may be concluded that the 'long and narrow' group of ditches mainly belongs to HaB but might include HaC/D examples. With the exception of the keyhole shaped ditch at Valkenswaard, all ditches in this group may be described as Long Ditches of Goirle type (Verwers, 1966b).

The 'short and wide' group numbers three dated monuments. Those at Riethoven and Goirle were constructed in HaB. The small rectangle at Someren belongs to HaC/D. At Best one of the ditches belonging to this group was surrounded by circular ditches of HaC/D date. The remaining examples of this group: Knegsel, Sittard, Toterfout, Veldhoven and Berghem are undated. These scanty facts seem to indicate that ditches of the 'short and wide' group were used during both HaB and HaC/D date. For this type of non-circular ditches, the name 'Long Ditches of Riethoven type' is suggested. (*Lange greppels van het type Riethoven; Langgräben Typus Riethoven*).

Interpretation

The division given above is based on purely morphological data. We now want to consider the possibility that it has more than a mere descriptive significance. On most plans of urnfields, it is clear that the monuments of both groups were constructed in close relation to the urnfield tumuli with circular ditches. The fact that the long and the circular ditches frequently touch one another, but never intersect, indicates a contemporaneity between both ditches. The relation between circular ditches and urn burials is evident.

In most of the Long Ditches of Riethoven type an interment was discovered on the long axis. Sometimes this was an urn with cremated bone, while in a few cases only cremated bone was found. This suggests that the Riethoven ditches are the last remnants of burial monuments. They differ from the circular tumuli only in shape, not in time nor function.

The oval monument at Berghem first brought into this group of Riethoven ditches, enclosures whereby rows of posts took the place of the ditch. Comparable to this is the oval monument discovered in the urnfield at Haps (Prov. Noord-Brabant, unpublished). There two rows of post-holes formed an oval enclosure of 20×6 m. On the long axis an urn of the HaC/D period had been placed, which might date the monument. Mention should also be made of the elongated enclosure bordered by postholes that was discovered in the urnfield 'De Roosen' at Neerpelt (Belgium). Fifty four posts, set in an oval of 36×3.6 m, enclosed an area with a central cremated interment contained in an urn with deliberately roughened surface (Beex and Roosens, 1961). This monument is an interesting combination of phenomena, related both to the ditches of Riethoven and of Goirle type.

The Long Ditches of Goirle type did not receive a central interment. With one exception, at Vlodrop, their elongated enclosures are empty. Beyond doubt however is their contemporaneity with and their relation to the urnfields. This suggested to A. E. Remouchamps that they could have had a cult function. In this he followed an hypothesis of J. H. Holwerda, who compared his single long ditches at Rijssen (Prov. Overijssel) with historical temples in Iceland (Holwerda, 1925). Worth mentioning is H. T. Waterbolk's remark, in his discussion on the Veldhoven long ditches, that 'lange bedden' were to be dated to the Iron Age, 'as appears from their relation to the urnfields' (Waterbolk, 1954). He designated the enclosures at Veldhoven as agricultural fields but did not comment on the way in which they were contemporary with it (see footnote 2).

The agricultural nature of the long ditches has also been suggested by A. E. van Giffen in his article on the excavation on the 'Noordse

Veld' near Zeijen (Prov. Drente) (van Giffen, 1949). There, in the middle of a cemetery with tumuli of Neolithic, Bronze Age, and Iron Age date, groups of parallel, elongated banks were situated. Their length varied between 30 and 60 m, their width between 3 and 5 m. They were bordered by ditches. Sections showed that the banks consisted of several layers, suggesting that at times fresh soil, taken from the ditches, had been brought on to the banks. These fields of a type resembling *Hochäcker* were dated by pollen analysis to the Bronze and Iron Ages (Waterbolk, 1949). They were in a few cases covered by tumuli of the *Brandhügel* type, that could be dated to the 4th or 3rd century B.C.⁴ The presented facts indicate that at Zeijen ditch systems similar to the Long Ditches of Goirle type are to be interpreted as agricultural fields. Moreover these fields were cultivated during a period, when the area in the immediate surroundings was in use as a cemetery. Bordering this cemetery in the east and southeast, an extensive system of Celtic Fields was discovered. Archaeological evidence and pollen analysis agree that the origin of these fields was in the Bronze Age. The fields may have been in use for a long time, according to Waterbolk. This offers the possibility, that the Celtic Fields and the *Hochäcker* at Zeijen are contemporary, making the economic value of the *Hochäcker* rather dubious.

Phenomena that are comparable to the situation at the Noordse Veld at Zeijen have been discovered in West-Germany (Pätzold, 1960). At Pestrup (Kr. Oldenburg), an extensive cemetery with Iron Age tumuli included several elongated banks, some in groups and others lying isolated. Excavations proved one of these banks to have been constructed in relation to a tumulus and after that tumulus had been erected. The funeral pyre below the tumulus contained two urns which can be dated around 400 B.C. This date then also applies to the bank. A C_{14} measurement gave 2440 ± 70 , i.e. 490 ± 70 B.C.

4. An older data, up to 600 B.C., would be possible for this type of tumulus which, according to Waterbolk, is related to the Zeyener Culture, which covers approximately the period of 600-400 B.C. (Waterbolk, 1962).

(GrN-3542). Old arable soil indicated this bank to be a prehistoric field.

Near Einen (Kr. Vechta, Oldenburg), five elongated banks were situated in the middle of a cemetery with 58 tumuli (Pätzold, 1960). Three banks lay adjacent to each other, two lay singly. Both single banks seemed at one end to be connected with a tumulus. This connection was at one place investigated. The section showed the tumulus to have been constructed in two stages. The first tumulus covered a funeral pyre and was dated to the 6th century B.C. The western end of the elongated bank lay on top of the side of the tumulus, thus being younger than this monument. The oldest tumulus and part of the bank were then covered by another tumulus, which itself could not be dated. A *terminus ante quem* for this second tumulus is provided by three urns that were finally buried in its sides. The oldest pot belonged to the Jastorf-b period, that covers the 5th century B.C. From this it follows that the bank was constructed between 600 and 400 B.C. This date is supported by a C_{14} measurement of charcoal from below the oldest tumulus, giving 2660 ± 60 , i.e. 710 ± 60 B.C. (GrN-4067). Excavation of part of the bank showed it to consist of ancient arable soil. The surrounding tumuli can also be dated to the Early Iron Age. Important is the presence of a large group of elongated banks, close to one another and immediately south of the cemetery. Here again we come upon the peculiar combination of an extensive agricultural area outside and a few fields inside the cemetery. Pätzold properly considered the cultivation of fields for economic purposes in the middle of this sacred area to be inconceivable. Taking into account the contemporaneity of tumuli and fields, he wondered whether the cultivation could have been carried out in relation with the burial ritual.

The evidence given above can be summarized by stating that agricultural fields were cultivated in the middle of cemeteries in the Late Bronze and Early Iron Age. For some fields their contemporaneity with tumuli was proved.

Returning to the Long Ditches of Goirle type in the southern Netherlands, we are again struck

by the similarity in shape of these ditch systems and the *Hochäcker*-like fields just described. Also the Goirle type ditches are supposed to have surrounded artificial banks. It were no burial monuments. At Bennekom their length seemed to be related to the soil conditions. Pollen analysis suggested an agricultural use for the enclosures at Veldhoven. In several cases, like Goirle, Veldhoven and Laagspul the long ditches were proved to be contemporaneous with and related to the circular burial monuments.

We therefore suggest that the Long Ditches of Goirle type enclosed arable fields of *Hochäcker* type. Their cultivation had a ritual purpose and was connected with the cult of the dead. Exact determination of this cult is impossible but the existence of the custom of ritual ploughing and sowing should be remembered.⁵ The crop grown on these fields may have supplied the food for funeral meals and may also have been used as offerings. From the datings available it follows that the HaB period mainly saw the practice of the custom of cultivating fields for sacred purposes.

Having divided the non-circular monuments in the southern Dutch urnfields, the possibility of a relation between the two groups should be considered. This relation could be based on their corresponding non-circular shape, which clearly marks them as exceptions to the circular ditches. Opposite this relation in shape however, stands the difference in function between the two groups. To us this difference is far more fundamental than the resemblance in shape, which moreover is only a distant resemblance. Therefore it seems impossible to derive one group from the other. An argument against this derivation also is their contemporaneity. Both the Long Ditches of Goirle and of Riethoven type were used in the southern Netherlands during the HaB period.⁶

5. Whether the presence of ploughmarks below tumuli should be interpreted as indications of ritual ploughing, seems questionable. Using these marks as support for the hypothesis of ritual cultivation of *Hochäcker*-like banks in cemeteries, is therefore debatable. However there is other evidence for the existence of ritual ploughing (Pätzold, 1960; van der Poel, 1961).

6. Mr. R. R. Newell kindly corrected the English manuscript, for which we are very grateful.

POSTSCRIPT

The soil samples from the long ditches at Goirle have not yet been analysed. We therefore intend to deal with the palynological evidence presented by non-circular monuments at a later date.

LITERATURE

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