

OF FARMS AND FIELDS:  
THE BRONZE AGE AND IRON AGE SETTLEMENT AND CELTIC FIELD AT HIJKEN – HIJKERVELD

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**ABSTRACT:** Between 1969 and 1973, excavations were undertaken at Hijken, the Netherlands. An area of 3 hectares within a cultural landscape replete with barrows and Celtic field banks was opened up and yielded Late Neolithic graves, a Bronze Age palisade and several Middle Bronze Age houses. During the Late Bronze Age and Early Iron Age, the site was still occupied and pits filled with fragmented pots may testify to abandonment rituals. Our analysis allows to diachronically trace changes and continuity in the use-phases of the site – suggesting that the site may have been inhabited from the Middle Bronze Age-B to the Late Iron Age. Remarkably, the eponymous house type (type Hijken) proved to be rather uncommon at Hijken and moreover appears to span the Early to Late Iron Age. Careful study of the interrelations of fence-lines, Celtic field banks and house plans suggests that bank development may have started in the Early Iron Age, but is it plausible that aspects such as Celtic field orientation may have been derived from older (Bronze Age) cultural landscape elements and preceding fence-systems.

**KEYWORDS:** Hijken, the Netherlands, Late Neolithic, Bronze Age, Iron Age, graves, settlement, houses, abandonment deposits, Celtic fields.

## 1. INTRODUCTION

The Hijkerveld is a heathland near the town of Hijken (municipality of Midden-Drenthe). It is located in the central part of the Drents Plateau, a boulder clay plateau, at the watershed of two fluvial systems, the Beilerstroom in the south and the Drentse Aa in the north (Harsema 1991, 21). The substrate consists of Saalian base moraine still known as boulder clay (c. 370-130 kA BP; De Mulder *et al.*, 2003: 197), which is found relatively close (*i.e.* less than 1.25 meters) to the surface in this area (Harsema, 1974: 28 (162)). Locally, the boulder clay is covered by 1 to 2 m thick aeolian sand deposits of Weichselian age (115-10 kA BP; De Mulder *et al.*, 2003: 206; 349), which have created a gently undulating landscape varying between 15-17 m above Dutch Ordnance Datum. At the top of these aeolian coversand deposits, Cambic podzols (Dutch: *veldpodzolen*) have developed (Stiboka, 1978, 119-128). During the Bronze and Iron Age (c. 2000 BC-0 AD), drift sand deposits of c. 20-100 cm thickness have locally altered the essentially glacial morphology (Harsema, 1970: 48 (176); Harsema, 1974: 30-31 (164-165); 1987b, 32).

The Hijkerveld is known for its prehistoric remains that were visible at the surface until heathland reclamations started in the 1930's (Brongers, 1973: 30; Janssen, 1848: 34-35; 11-112). About 40 barrows dating from the Late Neolithic to the Late Iron Age were known to exist, as well as the banks of a Celtic field system (Fig. 1; Harsema, 1987b: 7-34). The reclamation of the 1930's was accompanied by archaeological investigations during which the banks and barrows were mapped and

some barrows were excavated (Van Giffen 1938; 1939; 1943). During the 1950's, a second reclamation campaign took place, again accompanied by archaeological investigations (Van Zeist 1955; Van der Veen & Lanting 1991). During the late 1960's and early 1970's, a third archaeological campaign was set up, this time because of reallocation plans (Harsema 1972; 1974). From the six barrows that were left, four were to be levelled which necessitated excavation. At this occasion, two trial trenches were dug further to the south, near the Leemdijk, as Iron Age ceramics were found there amidst harvested beets. The trenches revealed features of a settlement site; subsequently two large areas north and south of the Leemdijk were extensively excavated (c. 3 hectares; Harsema 1991; 1997).<sup>1</sup>

The discovery of several Bronze Age house-sites came as somewhat of a surprise to the excavators since only Iron Age occupation phases were expected (Harsema, 1992: 78). Despite the fact that the Iron Age houses of Hijken are considered crucial to studies of house-typochronology (Hijken is the type site for the eponymous house type (Huijts, 1992: 67-72; Waterbolk, 2009: 55; 61 fig. 37), in most publications the Bronze Age features of Hijken have received most attention (*e.g.* Harsema 1991). Unfortunately, the Iron Age occupation phase was never published in full, nor were complete plans of the site published showing all recognised features and structures. In this contribution, we aim to redress this imbalance by presenting a diachronic overview of the activity phases at Hijken. This way, the better- and lesser known house plans of Hijken are put in synchronous and diachronic context, which allows to construct a fuller and

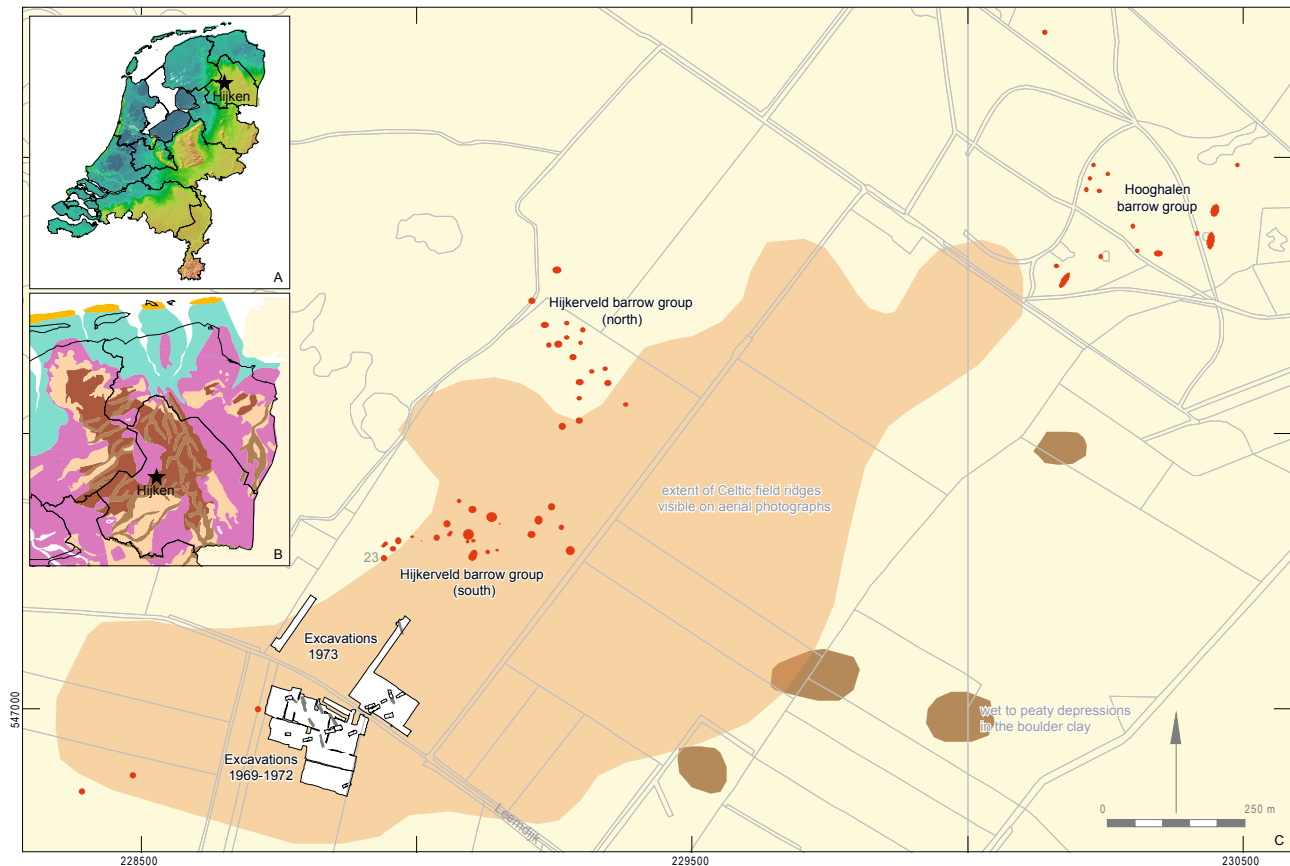


Fig. 1. A: Location of the site Hijken within the Netherlands, B: inset showing the location of Hijken in relation to the geology of the Saale period glacial till around 3800 BP (after: De Mulder *et al.*, 2003: 228 fig. 143), C: Overview of the excavations north and south of the Leemdijk and of the funerary monuments (red polygons; Late Neolithic barrows to Late Iron Age cinerary mounds), location of the Celtic fields as suggested by aerial photography (light brown shading), landscape depressions dark brown shading) and topography. Drawing: S. Arnoldussen (Groningen Institute of Archaeology, Groningen, the Netherlands).

richer narrative of the dynamics of later prehistoric communities at Hijken than hitherto known. To this end, we will present a diachronic overview below (following the traditional periodization; Van den Broeke *et al.* 2005) of the available evidence for the Late Neolithic, Bronze Age and Iron Age activities – amongst which are graves, enclosures, houses, outbuildings, abandonment rituals and agricultural field systems (Celtic fields).

## 2. NEOLITHIC

The first human activities in the Hijkerveld are known to have preceded the Neolithic. In the collections of the Drents Museum at Assen, various survey finds from the Hijkerveld spanning from the Mesolithic to the Late Neolithic periods are known (*e.g.* Harsema, 1987b: 16)<sup>2</sup>. During the Funnel Beaker Period (c. 3500-2900 cal. BC), relatively more sites are known in the vicinity of the Hijken excavations (*e.g.* Harsema, 1987b: 17)<sup>3</sup>, amongst which some Funnel Beaker Period sherds recovered from a finds layer underneath the mounds (tumulus 8) excavated at Hooghalen by Van Giffen (Van der Veen

& Lanting, 1991: 214). Possible Funnel Beaker sherds<sup>4</sup> were also recovered from an agricultural layer underneath Hijkerveld barrow 23, yet it remains noteworthy that diagnostic Funnel Beaker material is not present amongst the bulk of finds excavated in the most extensive 1969-1973 campaigns north and south of the Leemdijk. This suggests that the focal point of Funnel Beaker period activities will have been situated more to the northeast of the excavated areas.

For the Single Grave Culture period (c. 3000-2600 cal. BC), some artefacts datable to this period were recovered from the settlement site excavations. In the southern part of the northwest excavation trench, sherds of one or more Single Grave culture period amphorae were found.<sup>5</sup> Also, a flint blade possibly datable to the Single Grave Culture period<sup>6</sup> was recovered from the excavated area south of the Leemdijk (west of Iron Age house 2; *infra*). From an agricultural layer underneath Hijkerveld barrow 23, a sherd with plain spatula impressions in herringbone pattern<sup>7</sup> unequivocally dates to the (final phase of the?) Single Grave Culture period (Beckerman, 2013: 63). The relative scarcity of Single Grave Culture period finds from within the main excavation areas is remarkable, as

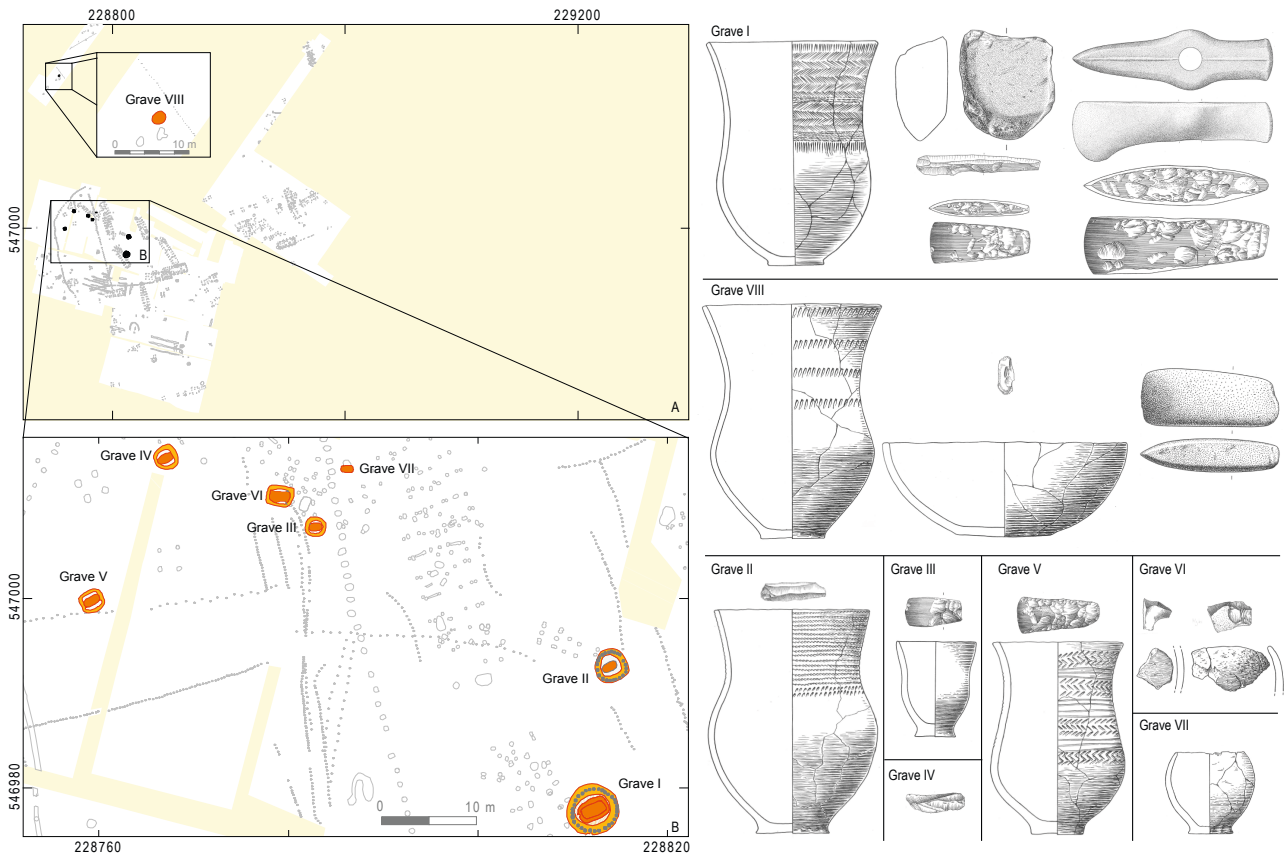


Fig. 2. A: Overview showing the location of the Single Grave Culture period graves, B: inset showing the clustering of the Single Grave Culture period graves and their peripheral structures. The inventories for several graves are shown to the left (all to same scale; the height of the cup in Grave III is 10 cm; drawings: Map S. Arnoldussen (Groningen Institute of Archaeology, Groningen, the Netherlands), artefacts Groningen Institute of Archaeology/ Biologisch Archeologisch Instituut.

within the excavation confines no less than eight graves datable to this period were found (Fig. 2). This suggests a spatial exclusivity of formal burial sites and domestic activities for this period at Hijken.

Six of the Single Grave Culture period graves showed a ditch very close to the burial pit, and in two of these ditches, posts have been observed (graves I and II; Fig. 2, B). Such post-constructions are seen as temporary, structures (screens?) erected during the funerary rituals or, in barrows, as part of the barrow chamber that were later covered by a mound body (Drenth, 2005: 357; Drenth & Lohof, 2005: 440; Bourgeois, 2013: 120-121). As the largest of the Hijken ring-ditches measures only 6 m in diameter (Grave I) and the smallest presently known Single Grave Culture period mound diameter measures 6.5 m (Drenth, 2005: 357), the Hijken graves most likely represent a flat grave cemetery. The fact that Bronze Age house 4 was constructed directly on top provides some support to this interpretation. In numbers of graves, the Hijken cemetery is paralleled only by that of Sleen (Van Giffen 1937; Drenth & Lohof, 2005: 453). Grave VIII may represent the oldest interment, as it yielded the early 'A3' axe type (c. 2900-2760 cal. BC; Butler & Fokkens, 2005:

394-395; Drenth, 2005: 349; radiocarbon date GrN-6295:  $4495 \pm 60$  BP; Beckerman, 2013: 50). However, grave V could be considerably younger (radiocarbon date GrN-6126:  $3970 \pm 35$  BP; Beckerman, 2013: 48). For graves II and IV, radiocarbon dates falling within these chronological confines are known (GrN-6325:  $4290 \pm 45$  BP and GrN-6651:  $4040 \pm 80$  BP respectively; Beckerman, 2013: 52-53). At Hooghalen, similar burials underlie Bronze age barrows (Hooghalen tum. 8; Harsema, 1987b: 48).

No interments are known for the Bell Beaker period (c. 2500-2000 cal. BC), and the notably diagnostic (dentate spatula impressed) ceramics are not present amongst the excavated sherds. However, during the excavation of Hijkerveld barrow 23, a sherd with dentate spatula impressions<sup>8</sup> in herringbone pattern was recovered from the agricultural layer underneath the barrow (Harsema, 1974: 31(165)). The large barrow directly west of the main excavated area and south of the Leemdijk was investigated by Van Giffen in 1930 and was dated by Harsema (1992, 77-78 fig. 5; 1987b, 11) to the Late Neolithic. Additionally, in the Hooghalen and Laaghalen clusters of barrows, barrow periods datable to the Bell Beaker Culture period were found (Harsema, 1987b: 12;

51; Lanting and Van der Plicht, 2002: 94).<sup>9</sup> The scarcity of graves and stray finds (flint, ceramics) argues against intensive use of the Hijken area during the Bell Beaker Culture period.

### 3. BRONZE AGE

Similar to the preceding Bell Beaker Culture period, the area of the Hijken excavations appears to be used with a very low intensity during the Early Bronze Age (c. 2000–1800 cal. BC). Diagnostic sherds, such as those with ‘Barbed wire’-stamp decoration have not been recovered from the Leemdijk excavations (Prummel *et al.*, 2009: 145–146 tab. 5). However, the agricultural layer underneath Hijkerveld barrow 23 (Harsema, 1974: 31(165))<sup>10</sup> yielded a single ‘Barbed wire’-stamp decorated sherd. A charcoal sample radiocarbon dated to c. 1920–1620 cal. BC (GrN-6642: 3460 ± 55 BP; Harsema, 1991: 27) which was recovered from posts of the palisade situated in the western part of Leemdijk excavations could also suggest an Early Bronze Age date, but its reliability has been questioned on various accounts. Harsema (1987b, 37–38) suggested that incorporation of older charcoal may have affected its dating. Lanting and Van der Plicht (2003, 183) stated that charcoal from various contexts was combined, which again decreases sample reliability. For the western ‘bow-shaped’ palisade trajectory, there is one stratigraphic relationship: the palisade is cross-cut by pit 154, dated to the Early to Middle Iron Age (Fig. 9). For the ‘bowstring-shaped’ NNW-SSE palisade, no evident stratigraphic relations are known. Although it passed perhaps impractically close to Bronze Age building house 7, no cross-cutting of features is observed. The ESE-WNW palisade appears to cross-cut the NNW-SSE ‘bowstring’ palisade and is itself cross-cut by (Middle?) Iron Age house 2. Moreover, Bronze Age house 13 overlaps with this palisade. For house 13, a radiocarbon date placing it around 1420–1260 cal. BC (GrN-6289: 3100 ± 35 BP; Harsema, 1991: 27) is available. Combined, the available evidence could support a dating between 3460 and 3100 BP (*i.e.* somewhere in the Early Bronze Age and Middle Bronze Age), but alternative scenarios remain equally valid (*e.g.* the charcoal dated was unintentionally incorporated charcoal, and the palisade dates to a bronze age habitation phase other than that comprising house 13).

The function of the series of palisades is ill understood: Harsema suggested a use as cattle corral (with less densely spaced posts on the settlement side to keep an eye on the livestock; Harsema, 1991: 26–27). Although these palisades clearly demarcate a large area, it should be stressed that the archaeological visible ‘fenced-off’ area is by no means ‘cattle-proof’, nor are there supporting arguments for the contemporaneity of the three main constituent palisades supposedly forming the corral. Moreover, a slight but noticeable inward curvature near openings at two

points of the westernmost palisade suggest that entrances may have been situated here (Fig. 3, C). The palisades, even singularly, may have served to divide a part of the landscape into a space for in- and outsiders of unknown background, and for equally unknown (yet possibly brief) periods. One could think of occasions of wider community aggregation, such as meetings, feasting, or arenas of exchange.

Within a Dutch context, the often quoted triple palisade enclosure of Anloo (Waterbolk 1960) appears a reasonable match: it has similar – even if slightly more elaborate – entrances, is in its largest phase of comparable size (75 by 100 m). However, it is unlike that of Hijken, a fully enclosing and rebuilt structure. Moreover, apart from a Late Bronze Age *terminus ante quem* (Waterbolk, 1959: 191 (70; pl. II), its dating is indirect and has shifted from Single Grave Culture (Waterbolk, 1959: 192(8); Piggott, 1965: 87 fig. 42) to Funnel Beaker Period (Waterbolk, 2009: 139). A similarly problematically dated palisade was uncovered by Holwerda (1912) at Uddelermeer, and Bakker (1979, 195–196) has argued that it could very well be Bronze Age in date. At Meteren - De Bogen, yet another poorly dated palisade appears to mark-out an area of roughly 60 by 100 meters (Hielkema, Brokke & Meijlink, 2002: 184; Arnoldussen, 2008b: 83 Fig. III.26). That part of the De Bogen excavation has yielded pottery dating from the Late Neolithic to the Middle Bronze Age (Ufkes & Bloo, 2002: 356; 358 fig. 4.85), providing only very crude chronological markers. The fact that at Hijken the orientation of the NNW-SSE ‘bow-string’ palisade is identical to some of the Middle Bronze Age-B houses (*infra*), suggests that – if not contemporary – few centuries will have lapsed between the construction of the post-alignment and the construction of the Bronze Age houses. Be it 5 or 500 years old, some aspects of the Hijken palisade were engrained into, and diachronically transmitted, in the local cultural landscape layout as shared orientation.

For the Middle Bronze Age-A period (c. 1800–1500 cal. BC) – characterized by pottery decorated in ‘Hilversum-style’, which is not known from the Northeastern Netherlands (Arnoldussen, 2008a: 177–178) – evidence for activities within the main excavated areas is absent. Consequently, we cannot easily pin-point possible settlement site locations in the wider vicinity of the Hijken excavations. Rather, it seems that in this case the generically low detectability of sites for this period (Arnoldussen, 2008a: 174–185) is regionally hampered additionally by absence of its most diagnostic tradition of pottery decoration. Other finds datable to this period, such as metalwork, are also absent. In the Hijkerveld and Hooghalen barrow groups, various barrows with ring-ditches have nonetheless traditionally (*cf.* Lohof, 1991a: 41–52; 1994, 111; Drenth & Lohof, 2005: 441 fig. 19.7) been placed into the MBA-A period (c. 6–13 mound periods in Lohof 1991b; Harsema, 1987b: 45–49; Van der Veen & Lanting, 1991: 196–224), but recent studies of barrow





Fig. 3. A: Overview of the location of the Hijken palisades. B: Detail of the Hijken palisades, with inset C showing the location of possible entrances. Map S. Arnoldussen (Groningen Institute of Archaeology, Groningen, the Netherlands).

typology have shown that ring-ditches presumably were current one of two centuries into the MBA-B (Bourgeois & Arnoldussen, 2006: esp. 20; Bourgeois, 2013: 24-38). Amongst these barrows is the famous Hijkerveld barrow IX, with the two bronze pins, single-barbed arrowheads (10 arrowheads), flint strike-a-light and golden hair tress spirals (Butler, 1969: 68 fig. 27; Butler, 1990: 65-67; fig. 11a; Fontijn, 2003: 345). Assuming that at least part of these mound were constructed during the MBA-A, one can only wonder where the settlement sites of these communities are.

A total of 8 to 9 house plans datable to the Middle Bronze Age-B (c. 1500-1000 cal. BC) was discovered north and south of the Leemdijk. Save for a few fence-lines and pits, no other structures such as granaries could be dated to this use-phase (Fig. 4). The orientation of the houses is NNW-SSE, and seems to reflect that of the 'bow-string'-palisade discussed earlier. As various house plans overlap, they seem to reflect a number of separate occupation phases. There is some evidence for the extending of houses (H14, possibly also H6) and occasional repairs (e.g. the north part of H11; Fig. 5), yet most house plans are single-phased. Most house plans conform to a general three-aisled structure, with entrances in the long sides and walls presumably fixed between doubled outer posts (Fig. 5, cf. Arnoldussen, 2008a: 195 fig. 5.14: wall option w4). In one (H5), possible byre sections are indicated by foundation trenches (for wattle hurdles?) in the side aisle, but this allows no identification of evident living- or byre sections within the other plans. House 7 is remarkable for its deviating orientation, its much smaller width and long line of ridge-posts (also present in the northern parts

of H11 and H21) and may represent a barn or outbuilding rather than a fully-fledged farmhouse. House 21 lacks the double outer posts typical of the outer farmhouses, and lacks an evident entrance in the southern long side, but its Bronze Age dating is confirmed by the ceramics from the (storage?) pit in its side aisle (indicated with the label 'v32' in Fig. 4, D). Houses 5, 13 and 19 may also have had pits situated in their aisles, but no datable finds were recovered from these features. Pits with Bronze Age finds were also found outside the houses: directly south of house 5 (v112) and north of house 13 (v146), large pits (diameter > 1.3 m) of unknown primary function were found.

The dating of the other houses is confirmed by three radiocarbon dates from (pits within) houses 4, 5 and 13. These dates combined suggest Bronze Age habitation between c. 1520-1210 cal. BC (House 4: GrN-6745: 3125 ± 65 BP, House 5: GrN-6290: 3090 ± 45 BP, House 13: GrN-6289: 3100 ± 35 BP; Arnoldussen, 2008a: 212). Bronze Age sherds were recovered from an entrance posthole of house 4 (v126), from a pit within house 5 (v109) and from a pit within house 11 (v160). A posthole within house 14, characterised by a suggested long-side entrance (Fig. 5), yielded two poorly datable sherds (v171; identified as 'prehistoric, possibly Iron Age?'). A pit (v25) situated at the overlap of houses 19 and 21 yielded a Bronze Age sherd mixed with 13 Iron Age sherds. The Bronze Age dating of house 19 is, however, confirmed by 3 sherds from a ridge-post (v64) and 4 sherds from an outer wall post (v65). The pottery from pit v73 (Fig. 4, D) displays a bucket- or barrel form typical of final MBA-B and early

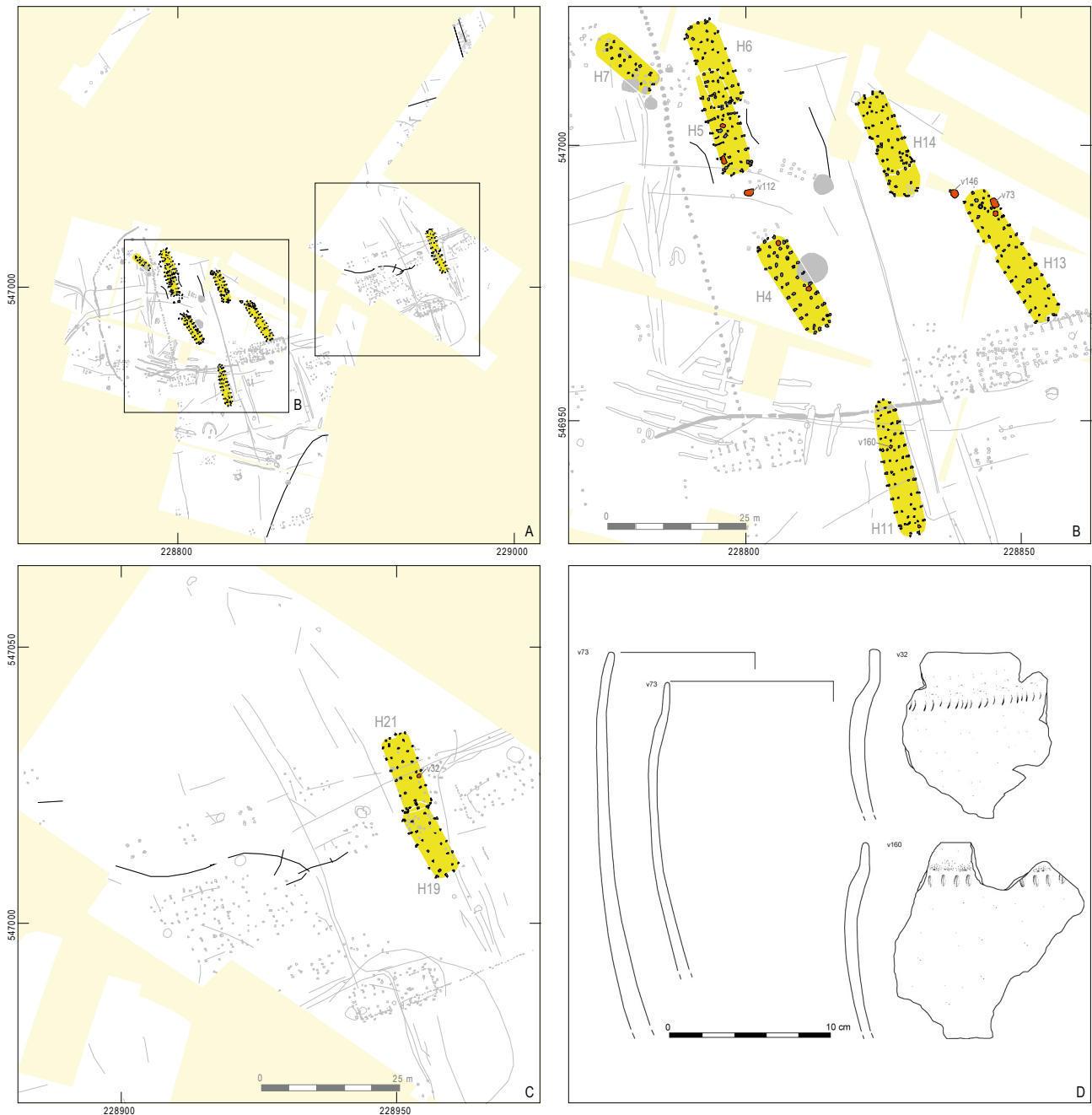


Fig. 4. A: Overview of the Middle Bronze Age-B houses at Hijken, B: detail of the MBA-B houses south of the Leemdijk, C: detail of the MBA-B houses north of the Leemdijk, D: Examples of MBA-B to LBA pottery (contexts indicated in B and C). Map S. Arnoldussen (Groningen Institute of Archaeology, Groningen, the Netherlands), artefacts Groningen Institute of Archaeology/Biologisch Archeologisch Instituut.

LBA ('*kummerkeramik*'/ 'Elp-pottery'; Waterbolk 1964; Fokkens, 1998: 113; Fokkens & Fontijn, 2013: 553), represents a *terminus ante quem* for house 13, whose outer posts were cross-cut by this pit.

House 15 conforms in orientation to the other Middle Bronze Age-B houses, but its plan shows characteristics of Elp-type houses (Huijts, 1992: 55-66; Waterbolk, 2009: 49-50 afb. 28): in the byre section the post-spacing is more narrow and extra inner posts (supports for byre sections) are added (Fig. 6, A, cf. Arnoldussen,

2008a: 210-211 fig. 5.23). A fragment of a bowl-shaped *Kummerkeramik* vessel originated from a pit in the side-aisle (Fig. 6, C, v15) and a sherd from a weakly-profiled pot with severe quartz-spalling (Fig. 6, C, v15) from a pit in the opposite aisle. Two pits directly adjacent to roof-bearing posts (v13; v18) yielded fragments of a distinct vessel with a roughened surface with clear vertical streaks (cannelure pattern). This surface finish is similar to that of Haps urn 440, dated to c. 1290-940 cal. BC (GrA-19123:  $2920 \pm 50$  BP; Verwers, 1972: 30; Lanting & Van der Plicht, 2003: 164). For the 'Elp-type' house

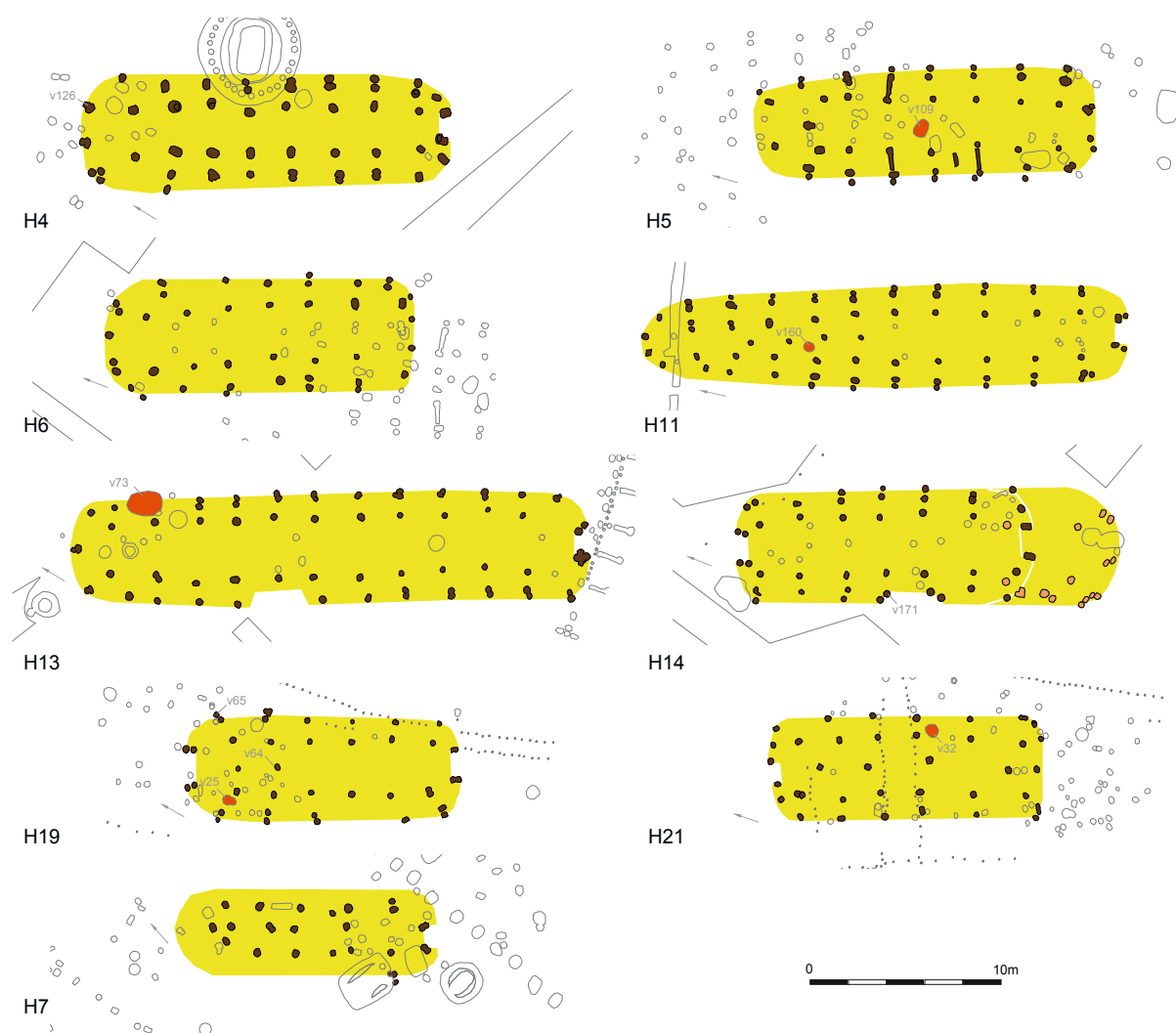


Fig. 5. House plans dateable to the Middle Bronze Age-B at Hijken, all drawn to same scale. Drawing S. Arnoldussen (Groningen Institute of Archaeology, Groningen, the Netherlands).

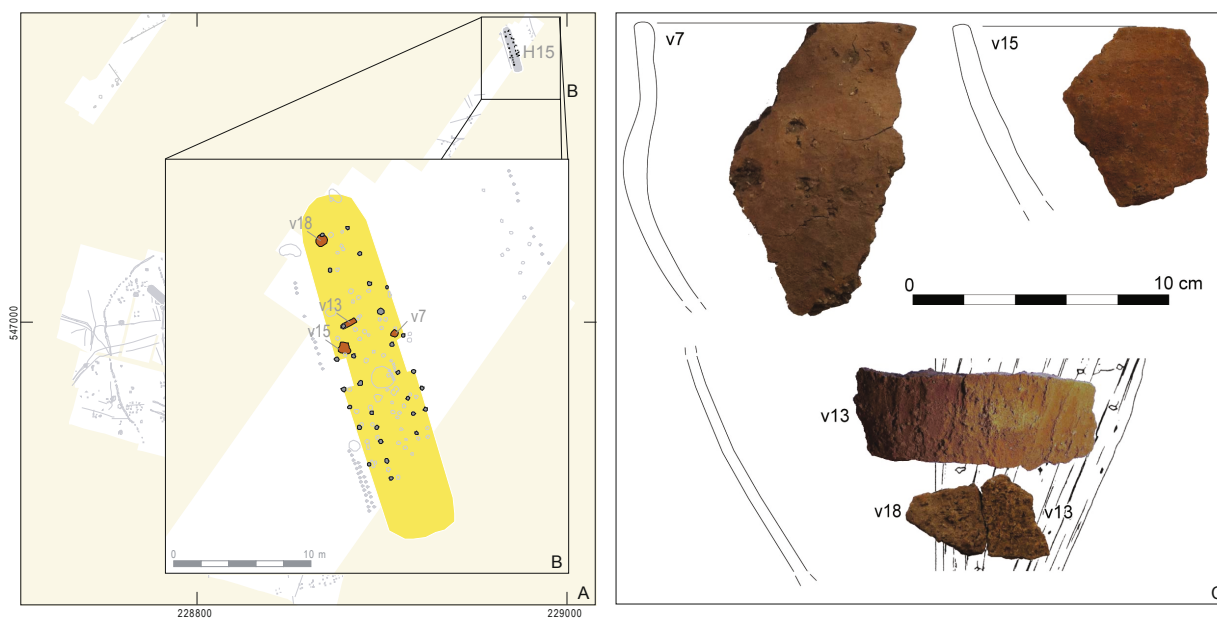


Fig. 6. A: Location and detail (inset: B) of the final-MBA-B/LBA 'Elp-type' house 15 and some of the pottery recovered (C; backdrop to sherds v13 and v18 is a part of Haps urn 440; Lanting and Van der Plicht 2003: 164). Map S. Arnoldussen (Groningen Institute of Archaeology, Groningen, the Netherlands), artefacts Groningen Institute of Archaeology/Biologisch Archeologisch Instituut.

plans in general, various dates suggest a most probable dating to around 1150-900 cal. BC (Arnoldussen, 2008a: 212 fig. 5.24). Possibly, habitation shifted in a northern direction at the Middle Bronze Age to Late Bronze Age transition, with house 15 being the single recognised plan in the less extensively investigated area.

#### 4. EARLY TO MIDDLE IRON OCCUPATION PHASE

In the Iron Age, the settlement shifted to the south, returning to approximately the same location where the Middle Bronze Age settlement was before, but now occupying a larger area (Fig. 7).

Quite uncharacteristically, as Hijken is known for its eponymous Middle to Late Iron Age house type (Waterbolk 2009, 55), most houses belong to the older occupation sub-phase that can be dated at the end of the Early Iron Age and the beginning of the Middle Iron Age (see below). Saliently, the 'Hijken'-house type is not common at Hijken, as only three out of twelve Iron Age houses belong to this type. Moreover, only one house of the Hijken-type can be dated convincingly to the Middle to Late Iron Age (H18; *infra*).

A total of eight houses, two outbuildings and five granaries, can be dated through <sup>14</sup>C-dates or associated finds to the Early to Middle Iron Age occupation phase with certainty. Probably more (if not most) granaries need to be assigned to this phase as well, yet in absence of associated finds or <sup>14</sup>C-dates, the age of most granaries remains unknown. The settlement area spans and presumably surpasses the excavation extents. Not all houses were contemporaneous and probably belong to different sub-phases within the Early to Middle Iron Age occupation phase: house 2 cross-cuts house 3. Houses 16 and 17 are that close that a contemporary usage would imply that some entrances would be blocked, again suggesting that one succeeded the other. Unfortunately, the pottery typochronology and the <sup>14</sup>C-dates do not permit to determine the exact phasing or layout of each use-phase within this Early to Middle Iron Age periods. All houses share an ENE-WSW orientation, which is perpendicular to the common house orientation of the Middle and Late Bronze Age. Presumably (as fence lines cannot be dated exactly) the houses were placed within a system of picket fences that had a similar orientation and divided the area into parcels ranging from c. 25 by 25 meters to c. 30 by 40 meters (Fig. 7). The parcelling systems stretched from the southern part of the excavation to the northern part and extended into (and beyond) the western trench north of the Leemdijk. Not all parcels show evidence of house plans suggesting that not all parcels should be interpreted as individual house-sites.

The house plans themselves show a great variety in construction and do not all fit within the existing house typologies as formulated by Huijts (1992) and Waterbolk

(2009): only house 2 and 3 belong to the Hijken type (following Waterbolk's (2009, 55) criteria). Furthermore, the <sup>14</sup>C-date of house 3 and pottery associated with house 3 (below) contradict the Hijken-type as being representative for the Middle and Late Iron Age only. The <sup>14</sup>C-dates listed as relevant for the Hijken-type (Waterbolk, 2009: 55) cannot all be traced back to houses that belong to the Hijken type. To start, Hijken houses 1 and 8 can only be described as being of a generic Iron Age type (Fig. 8). Moreover, house 3 from Paddepoel (Van Es, 1970: 209-217; 226), Holsloot house 2 (Van der Velde *et al.*, 2003: 22, fig. 3.9) and the house from Dalfsen-Welsum (Van der Velde *et al.*, 2001: 12 fig. 6) listed by Waterbolk (2009, 55) do not fit the type description. Reliable dates are known for houses that do fit the 'Hijken-type' criteria such as Hijken house 3 (Early to Middle Iron Age, see below), Hijken house 18 (Middle to Late Iron Age, see below) and Noordbarg house 14 (Middle to Late Iron Age: 379-61 cal. BC; GrN-7216: 2175 ± 50 BP; Waterbolk, 2009: 55). Evidently, the use of the 'Hijken type'-label should (1) be the outcome of critical assessment whether the house plan fits the criteria, and (2) should not be taken to imply that such a house plan can only date to the Middle and Late Iron Age.

Although not all Early to Middle Iron Age houses at Hijken could be attributed to a specific type, there are shared traits such as a three-aisled set-up and placement of entrances in the long sides of the house between the byre and the living area (Fig. 8). The variation is most evident in (a) the number of entrances (four in H16 and H17, two in the rest), (b) the pattern of roof-bearing posts in the living area (triangular in H1, H17 and H22, rectangular in H2, H3, H8, H10 and H16, unknown in H12 and H23), (c) the presence of substantial closely-spaced wall-posts (present in house 2 and 3, absent in the other houses), (d) the span of the first set of trusses in the byre area (smaller span; H2, wider span H1, same span: others), and (e) the shape of the postholes (round: houses 1, 12, 16 and 22, square in house 2, 10 and 17, both in houses 3 and 8). Also, some houses show a very strong resemblance suggesting contemporaneity or rebuilding (*e.g.* house 1 and 22 or house 16 and 17).

While most house plans in Hijken fit no established types in current house typologies, some parallels are known from other sites, for example for the fourfold entrances of H16 and H17. The house of Dalfsen-Welsum also has four entrances and apsidal ends and was interpreted as belonging to the Elp-type and therefore dated to the Late Bronze Age (Van der Velde, 2001: 20). However, the accompanying pottery (*op. cit.*, 26, fig. 13) corresponds well to that of the Early to Middle Iron Age pits v40 and v20 (Fig. 9) next to houses H16 and H17. A small biconical vessel that was found in pit v20 could be refitted to a fragment from a roofbearing post (v21) of H16, confirming contemporaneity (Fig. 8). The similarity in structure between Dalfsen and Hijken H16/17 and the associated finds render a dating in the Early Iron Age



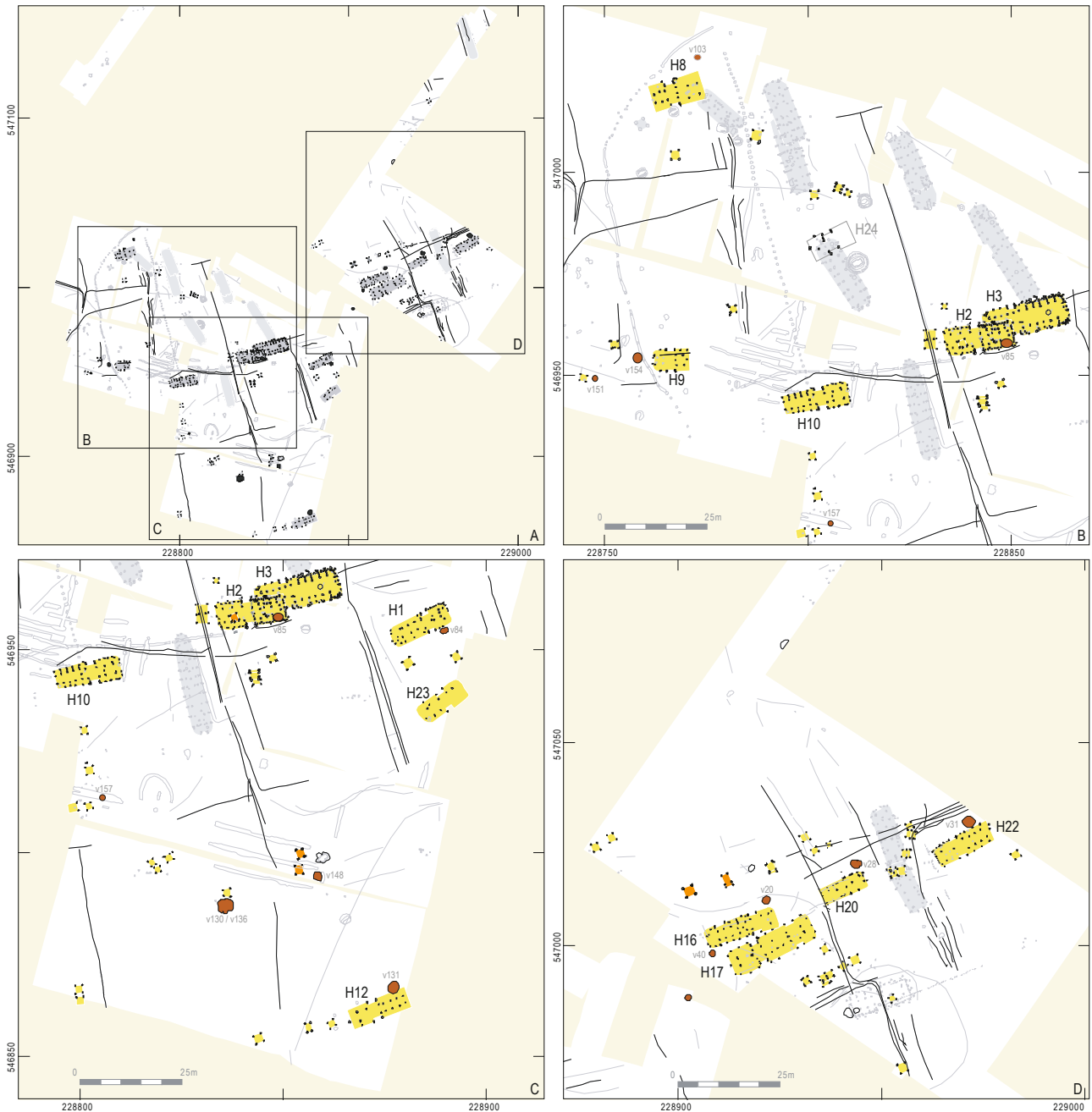


Fig. 7. Overview (A) of the Early (to Middle) Iron Age settlement traces (houses, outbuildings, fence lines at Hijken). Insets B-D show, all to same scale, the distribution and numbers of the house plans and pits. Outbuildings securely dated to this period show orange backgrounds, undated examples yellow grey backgrounds. Pits dated to this period with brown fills, undated pits with black outlines. Houses 2, 12 and 22 may date to this phase, but lack substantiating evidence. None of the fence-lines mapped are dated directly. Map S. Arnoldussen (Groningen Institute of Archaeology, Groningen, the Netherlands).

more likely. Structure 4 from Borger-Odoorn also concerns a structure with four entrances, here with a byre section in the middle (Van der Meij, 2010: 22, fig. 15). Based on claimed (yet not real) similarities of the Borger plan to Hijken-type houses (*op. cit.*, 23), the Borger house is dated to the Middle or Late Iron Age, but finds from this period are lacking, nor are supporting  $^{14}\text{C}$ -dates available.

Hence, an earlier (Early to Middle Iron Age, *cf.* H16) date is equally possible for the Borger house.

For the other Hijken houses, only house 3 has a reliable  $^{14}\text{C}$ -date (charcoal recovered from a posthole belonging to the structure itself was dated: 753-366 cal. BC; GrN-6288: 2375  $\pm$  35 BP; Lanting & Van der Plicht, 2006: 280, 343). House 1 was not dated directly, as a charcoal

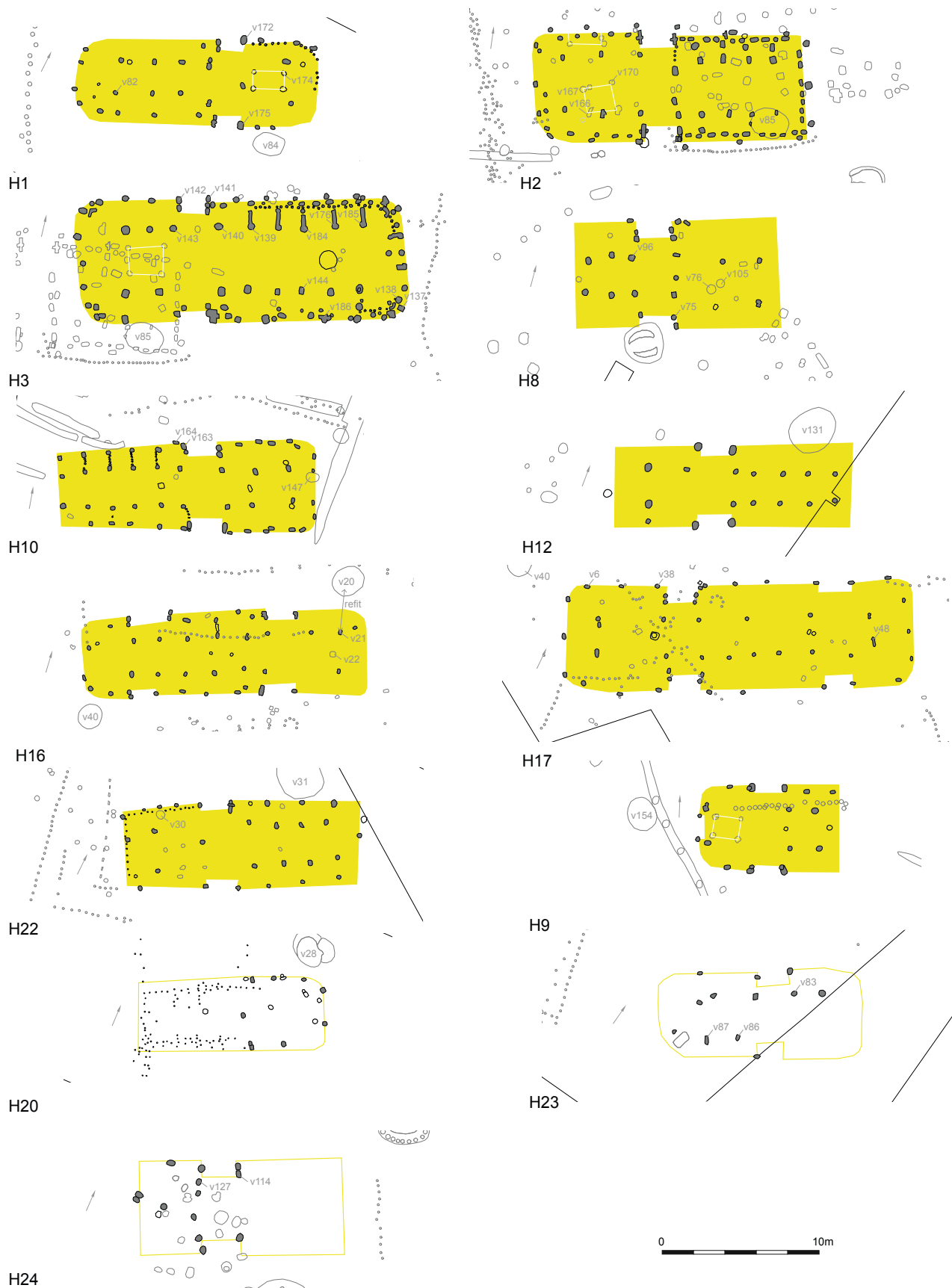


Fig. 8. House plans dated to the Early to Middle Iron Age at Hijken, all drawn to same scale. Houses H20, H23 and H24 have been included for sake of completeness, but are regarded by the present authors as very tentative. Drawing S. Arnoldussen (Groningen Institute of Archaeology, Groningen, the Netherlands).

sample from an adjacent pit (v84; Fig. 8) was dated to 730-391 cal. BC (GrN-6291:  $2380 \pm 35$ ; Lanting & Van der Plicht, 2006: 280, 343). A charred cereal grain was radiocarbon dated to determine the age of H8, but calibration resulted in a broad range spanning the Early- and Middle Iron Age periods (763-210 cal. BC; GrN-20553:  $2355 \pm 80$ ; Lanting & Van der Plicht, 2006: 280, 343) and it remains unclear exactly from which feature these cereals originated. The finds from the postholes of H3 confirm its dating to the Early to Middle Iron Age. From one posthole a remarkable quantity (920 g) of sherds were recovered (Fig. 8, v140), comprising smoothened fragments typical of the Ruinen-Wommels 1- type (Waterbolk 1962) or the local G1-type (dated c. 600-400 cal. BC by Taayke, 1995: 52; 1996: 170-173) and one strap-handle of a *Henkeltasse*. No radiocarbon dates for *Henkeltassen* exist for the Northern Netherlands, but on the basis of their occurrence in urnfield contexts (e.g. Kooi, 1979: 37 fig. 27; 99 fig. 94-95) and the established dating of this type in the Southern Netherlands (Van den Broeke, 2012: 99-100) an Early Iron Age dating can be assumed. Another posthole of H3 (Fig. 8, v144) also yielded various sherds (411 g), including a rim fragment with fingertip impressions on top of the rim (local V1-type, c. 700-400 cal. BC; Taayke, 1996: 182). Only one fragment with fingertip impressions on the top of the rim could be associated with house 10 (Fig. 8, v163). The Early to Middle Iron Age dating of H16 through its refit with pit v20 has already been discussed above. From two postholes of H17 (Fig. 8, v38 and v39) fragments of vessels belonging to the Early to Middle Iron Age G1-type (*supra*) were found. A small pit in the living area of house 22 (Fig. 8, v30) yielded fragments possibly originating from a G1-type vessel. For houses H2, H8 and H24, no directly associated datable finds or radiocarbon dates are available. Their association to the Early/Middle Iron Age phase is solely based on similarities in the composition of their plans and their shared orientation to houses more securely dated to this period (*i.e.* house 3 and 1).

Pits with a large number of sherds were located near houses 1, 3, 12, 16, 17 and 22 and outbuildings 9 and 20. The ceramics from these pits belonged to the same types of pots as those the postholes (G1-type, *Henkeltassen*, V1-type), but in the pits *Harpstedt*- and *Schräghals*-storage vessels that can be dated to the Early Iron Age were also found (Lanting & Van der Plicht, 2006: 171).

Various other finds can only be dated to this phase by association and reflect a broad spectrum of agricultural activities: querns for the processing of cereals, spindle whorls for the spinning of wool, burned quartzite stones used as pottery temper or as cooking stones and burned clay fragments that may reflect the remains of ovens or the lining of hearths or walls. Burned bone fragments and a cattle horn-core are the few surviving remains of the farmers' livestock.

#### 4.1. Iron Age abandonment deposits

Several of the larger pits that can be dated to the Early to Middle Iron Age (*cf.* Fig. 7) show a close proximity to six house plans and two outbuildings from the same period. The pits have a diameter between 160 and 360 centimetres, with depths ranging between 60 and 100 centimetres. The shapes and fills of the pit vary, with some pits being lined with sods and others showing no reinforced sides. Some pits seem to have been dug and filled only once, whereas others show more complex phasing (with re-cutting and multiple phases of filling). With six houses, the pits were placed within 3 meters from the house wall. In the cases of H1, H3, H12 and H22 the pits were located that close to the houses that they either overlapped with the location of the walls, or were at least detrimental to the structural stability of the houses. In these cases, it rather seems that the nearby pits were dug after the houses were abandoned. The general contemporaneity of (abandoned) houses and associated pits is shown by refits of sherds between postholes of the house and sherds from the same vessel in the nearby pits, such as the fragment from a vessel in the post-hole of house 16 and other fragments of the same small vessel from pit v20 (*supra*; Fig. 7, v20). Presumably, a vessel fragmented at the time of the abandonment of house 16 ended-up (intentionally placed?) in a posthole of the house and a nearby pit. This fragmentation is tentatively interpreted as an intentional act executed during abandonment rituals at the time of abandonment of the house (*cf.* Gerritsen, 2003: 95-102), with sherds of the shattered vessel(s) being distributed in the former locations of (extracted) house-posts (post-pipes) and larger pits.

It is unclear what the original function of the large pits was, but it is unlikely they were all dug solely to retain material remains of abandonment rituals. The walls of pit v130 were reinforced with sods displaying a distinct podzol colouration. As the pits were dug into the less-permeable glacial till, they could have retained and contained fresh water (Harrema, 1974: 34 (168)). Others may have been dug primarily for the extraction of clay for pottery production. After serving their primary function, the pits were used to deposit substantial amounts of household pottery. As not all houses are accompanied by such pits, it can be deduced that there was no evident necessity to have such a pit. Rather, it seems that the deposition of fragmented household items into large pits took place upon abandonment of particular houses and outbuildings (Table 1).

All of the material in the pits belongs to the RW1/G1 types (Waterbolk, 1962; Taayke, 1995: 52; 1996: 170-173). Pits containing pots of the Middle to Late Iron Age types RW3/G3 (c. 400-200BC/0 AD; Taayke, 1995: 54-55; 1996: 173) were not found. Evidently, the custom of digging pits and filling them with household debris was only practiced in the Early to Middle Iron Age phase.

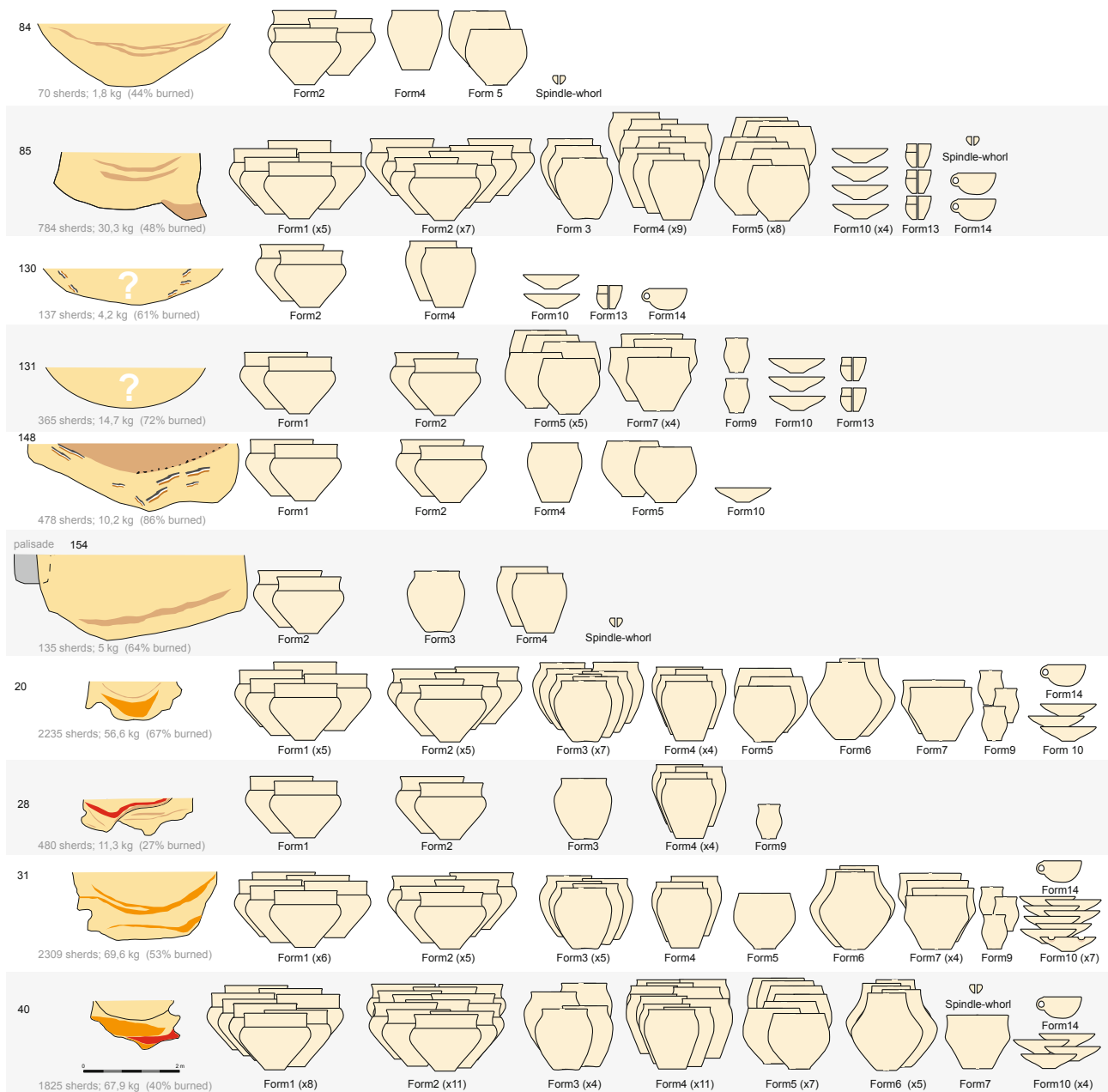


Fig. 9. Schematic overview of the Early to Middle Iron Age pits at Hijken. For each pit, a schematic section is drawn (light brown bands = fill layers, black fragments = charcoal, red layers = burned daub, orange layers = pottery depositions) and the numbers/weight of the sherds recovered are listed. The schematic pots depicted to the right of the section drawings, visualize the minimum number of pots fragmented to account for the sherds recovered from the pits (note: it should not be taken to indicate that entire vessels of that type were deposited, as vessel representation is generally (and intentionally) low). Overview of vessel shapes: (1) S-profile with a sharp neck-transition, often accentuated by a small groove. The neck itself is straight. (2) As 1, but with an outwards bending neck. (3) Weak S-profile. (4) Weak S-profile, bucket-shaped. Often fingertip impressions on top of the rim and partly smitten. (5) Biconical, sometimes with small everting rim. Often fingertip impressions on top of the rim and partly smitten. (6) Weak s-profile with long neck without a clear transition between neck and shoulder. Often fingertip impressions on top of the rim. (7) Biconical vessels. (9) Small vessels, maximum circumference < 15 cm, (10) bowls, often with a inner rim protrusion (*haakrand*). (13) miniature vessels, maximum circumference < 10 cm. (14) handled cups (*Henkeltassen*). (15) S-profile with sharp transition between belly and shoulder and shoulder and neck. Drawing: S. Arnoldussen (Groningen Institute of Archaeology, Groningen, the Netherlands).

The comparable content of pits reflects a shared concept of ‘what should end up in the pits’ and how the pit content should be treated. First, although there is some variation between the pits in the number and weight of sherds, all

pits contain large fragments of invariably incomplete vessels – arguing against an interpretation as ‘settlement debris in a refuse pit’ (Fig. 10). Second, the pottery found in the pits was partially (27-86%) subjected to secondary



Table 1: Contents of the Early to Middle Iron Age pits at Hijken. For the numbers of sherds and total weight, see Table 2.

Pit no.	Dating	Ceramic types	Other materials	Remarks
V20	EIA/MIA	RW1/G1's; <i>Harpstedt</i> storage vessels; <i>Schräghals</i> storage vessels; bowls; <i>Henkeltasse</i> ; small ( $\varnothing < 15$ cm) vessels	Charcoal; stone; flint; burned bone fragments; burned clay	Spindle-whorl in posthole of house 16
V28	EIA/MIA	RW1/G1; <i>Harpstedt</i> storage vessels; small ( $\varnothing < 15$ cm) vessels	Charcoal; burned bone fragments; burned clay	
V31	EIA/MIA	RW1/G1's; <i>Harpstedt</i> storage vessels; bowls; <i>Henkeltasse</i> ; small ( $\varnothing < 15$ cm) vessels	Charcoal; stone; flint; burned bone fragments; burned clay	
V40	EIA/MIA	RW1/G1's; <i>Harpstedt</i> storage vessels; bowls; small ( $\varnothing < 15$ cm) vessels	Charcoal; stone; flint; burned bone fragments; burned clay; spindle whorl	
V84	EIA/MIA	RW1/G1's; <i>Harpstedt</i> storage vessels;	Flint; charcoal; burned bone fragments; burned clay; spindle whorl	
V85	EIA/MIA	RW1/G1's; <i>Harpstedt</i> storage vessels; bowls; <i>Henkeltasse</i> ; small ( $\varnothing < 15$ cm) vessels; miniature ( $\varnothing < 10$ cm) vessels	Stone; flint; burned bone fragments; burned clay; spindle whorl	
V130	EIA/MIA	RW1/G1; <i>Harpstedt</i> storage vessels; bowl		
V131	EIA/MIA	RW1/G1's; <i>Harpstedt</i> storage vessels; bowls; small ( $\varnothing < 15$ cm) vessels; miniature ( $\varnothing < 10$ cm) vessels	Stone; burned clay	
V148	EIA/MIA	RW1/G1's; <i>Harpstedt</i> storage vessels	Burned clay	
V154	EIA/MIA	RW1/G1's; <i>Harpstedt</i> storage vessels; <i>Schräghals</i> vessel	Burned clay; spindle whorl	

Table 2: Early to Middle Iron Age pits at Hijken with number and weight of sherds, minimal number of individual pots and minimal number of base fragments and percentages of burned sherds. The sherd count and total weight for pit V85 may be even higher, as part of the unmarked sherds were dismissed because the material of two contexts were mixed-up. Only marked sherds were counted and weighted.

Pit no.	Associated structure	Contains (n)/(g) sherds	Contains (n individuals) / (n bases)	% burned sherds
V20	House 16	2235/56555	35/32	67
V28	Outbuilding 20	480/11312	14/4	27
V31	House 22	2309/69639	37/35	53
V40	House 17	1825/67929	63/33	40
V84	House 1	70/1882	6/2	44
V85	House 3	784/30311	42/17	48
V30	House 12	137/4169	5/0	61
V131	(near a granary)	365/14661	21/16	72
V148	(near a granary)	478/10157	9/7	86
V154	Outbuilding 9	135/4974	6/0	62

firing (Table 2). The patterns of secondary firing do not accord with normal household usage. For example, discoloured breaks of sherds suggest that burning occurred *after* fragmentation. Moreover, a wide range of objects and vessel types are affected, from small vessels to large storage jars to bowls to spindle-whorls. All pits also contained fragments of burned clay, possibly originating from daub-and-wattle walls and from hearth linings. Most pits also contain charcoal and parts of querns, burned quartzite stones and burned flint. Burnt bone is much less common: only small fragments were found. In four cases a single spindle-whorl was found in the pits; three of these were also secondarily burned.

The contents of the pits seem – albeit in a *pars-pro-toto*, fragmented form – to embody the full range of materials and activities needed for daily life: pots for storage, pots for cooking, vessels for eating, vessels for drinking, querns for grinding cereals, stone possibly intended as tempering material, spindle whorls for making yarn, and clay from hearths for cooking and housing. Similar finds are well-known for this period from the south of the Netherlands (Gerritsen, 2003: 96-102) to the salt-marsh areas in the northern Netherlands (Bos *et al.*, 2001: 215-218). These pits are often dug in places where postholes were situated at the location of former entrances, and contain burned fragments of almost complete pots (Gerritsen,

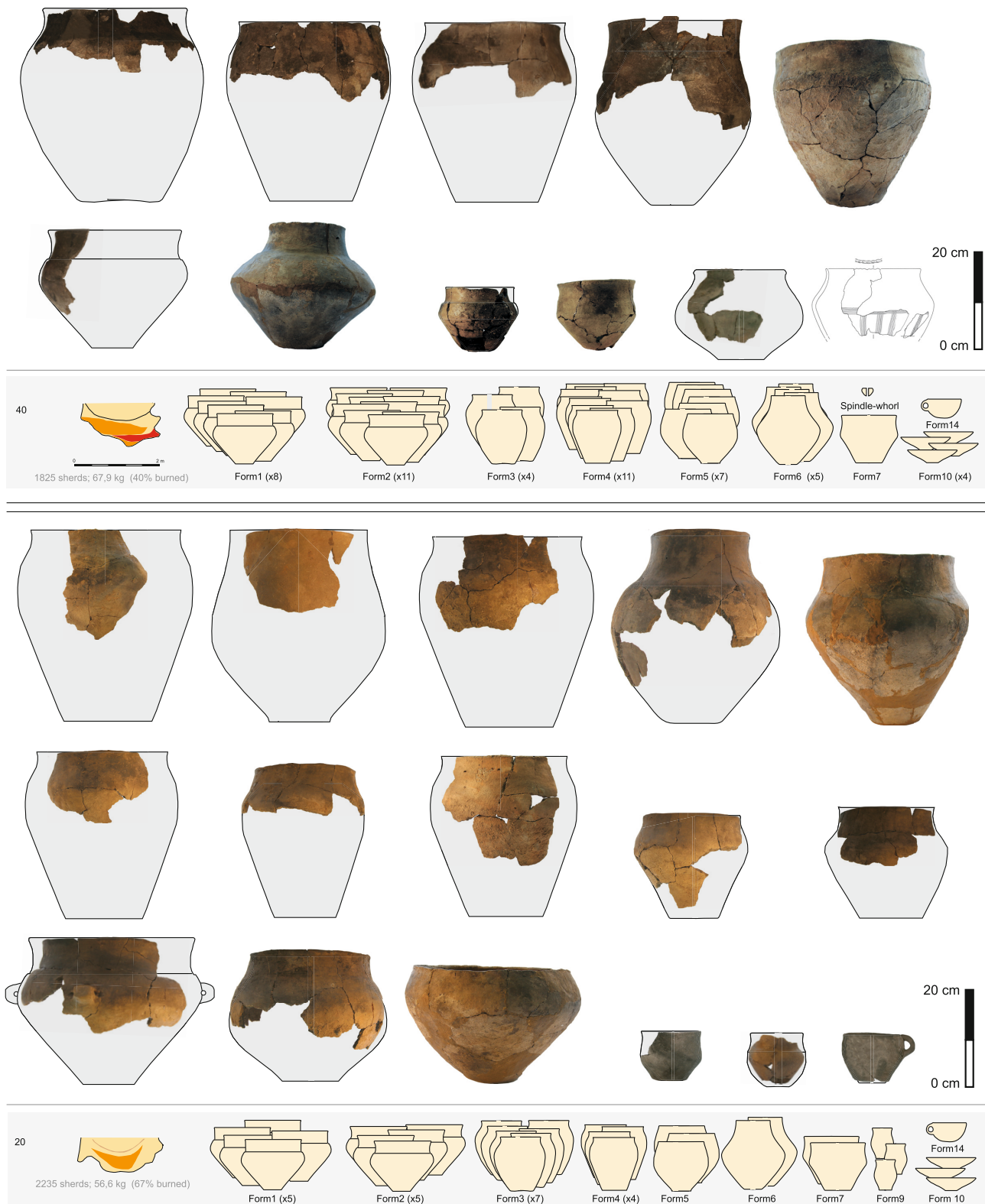


Fig. 10. Figure showing a selection of the pots (particularly those that allowed reconstruction of the vessel's form and size, all to same scale) for pits V40 (top) and V20 (bottom). For each pit, the summarized contents as shown in Fig. 9 are listed as well. Drawing of decorated pot R. Kruisman/J.N. Lanting, photographs: K.M. de Vries/P. Lunshof (Groningen Institute of Archaeology, Groningen, the Netherlands).

1999: 88-89) or contain an assemblage of burned household 'tools' (Van Hoof, 2002: 84-87). In all cases, these pits are considered to relate to the abandonment of the

house and show a remarkable consistency of the material put in them: large amounts of sherds that have been damaged through secondary firing and fragments of other

household items such as grinding stones and spindle-whorls. The pits themselves, however, show a great variation in shape and size (Gerritsen, 2003: 89). The pits of Hijken-Hijkerveld fit this description well; both in terms of their contents as well as their position relative to the (former) houses. The pits described above were, however, not the only examples of object deposition. For example, a burned small vessel was placed in a posthole of a granary-type outbuilding (v44). However, prior to interment, one sherd was chipped off and placed in another posthole of the same granary (v45), again reflecting a tradition of fragmenting pots and re-distributing sherds in the postholes (of removed posts?). Similarly, in the Middle to Late Iron Age phase (*infra*) a similar deposit occurred. This time, a large fragment of a RW3-pot (datable to 400-200 BC; Taayke 1995, 54-55; 1996, 173) was secondarily burned and placed in a posthole of another granary (Fig. 11, C v62). Van den Broeke (2002, 52, table 1; appendix 1) listed similar practices for the South of the Netherlands and also connected these depositional acts to the abandonment of settlement structures.

## 5 MIDDLE TO LATE IRON AGE OCCUPATION PHASE

Only one house (H18) and one granary can be dated to the Middle to Late Iron Age with certainty. Both structures are located north of the Leemdijk (Fig. 11). House 18 was surrounded by two curvilinear fences: one fencing-off the house itself and one fencing-off a larger area south of the

house. Significantly, and in stark contrast to the fences of the previous period, these fences are both semi-circular and do not form a part of the system of fences with the ENE-WSW orientation.

House 18 is dated by charcoal from three different postholes (360-109 cal. BC; GrN-19696:  $2165 \pm 35$  BP; 358-56 cal. BC; GrN-10695:  $2140 \pm 40$  BP; 358 cal. BC-79 cal. AD; GrN-8252:  $2070 \pm 80$  BP; Lanting & Van der Plicht, 2006: 343). A large fragment of a vessel of the RW3-type (v55: Waterbolk, 1962: 33-45) or local G3-type (c. 400-200 cal. BC; Taayke, 1995: 54-55; 1996, 173) was recovered from a posthole of the house plan. The other postholes contained among others small fragments of tephrite (a quern?: v61), a small iron slag (v52) and large forge slag that consisted of 59% pure iron (v57). A single posthole (v26) north to the house could also be dated into this phase on the basis of a sherd of the local V2-type (c. 500-200 cal. BC; Taayke, 1996: 182, fig. 10d), but this posthole could not be assigned to a structure. No other features, such as pits, could be dated to the Middle to Late Iron Age use-phase of the site.

Remarkably, house 18 is the only house which shows the ‘traditional’ Middle to Late Iron Age date for a house plan of the Hijken type (Waterbolk, 2009: 55). Compared to house 3 (also of the ‘Hijken-type’, yet dated to the Early to Middle Iron Age; *supra*), house 18 is much smaller – particularly its byre section. Furthermore, the spacing of the postholes of house 18 is far more regular than that of house 3 and the postholes of house 18 are square rather than round, suggesting that the main differences between early (Early-Middle Iron Age) Hijken-type houses and

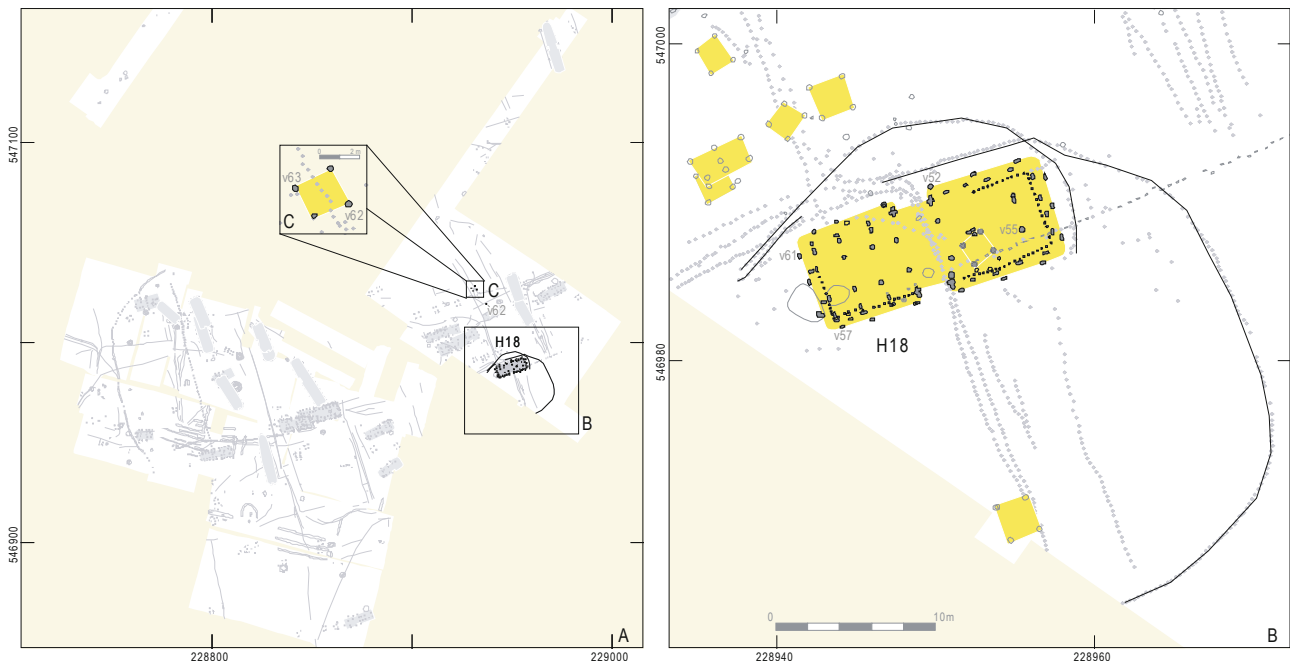


Fig. 11. Overview (A) of the structures (houses, outbuildings, fence-lines) datable to the (Middle to) Late Iron Age at Hijken, with insets showing the location of house 18 (B) and of a granary that yielded sherds datable to this phase from two of its posts (C). The fences-lines are dated solely to this phase based on their spatial relation to H18. Drawing S. Arnoldussen (Groningen Institute of Archaeology, Groningen, the Netherlands).

later (Late Iron Age) Hijken-type houses, may lie more in details such as post-shape and the more careful execution of the plan, rather than in fundamentally different building traditions.

## 6. FARMS AMIDST FIELDS? THE CASE OF THE CELTIC FIELDS

The presence of Celtic field remains within the Leemdijk excavations did not come as a surprise (Harsema, 1987b: 28), as the Celtic field banks on the Hijkerveld were visible up to the reclamation in the 30's of the last century and were mapped by Van Giffen (around 1930), who labelled them pagan encampments, (*cf.* Harsema, 1992: 75, fig. 3). Aerial photographs from the 1950's show the banks on both sides of the Leemdijk as lighter strips in the fields. In addition to these aerial photographs, evidence for the locations of Celtic field banks comes from the field notes and the field drawings; the banks were in some places documented during the excavations as grey discolorations of the excavated surface, in other places they were even preserved as slight, elevated ridges (especially north of the Leemdijk). Where the banks were visible, they were often accompanied by fence-lines presently attributed to the system with the ENE-WSW orientation (Fig. 7). At some places, plough marks were discovered at the same locations as the Celtic field banks (Fig. 12). Unfortunately, as no sections were drawn or photographed, the stratigraphic sequencing of fences, ard-marks and Celtic field banks remains unclear in most parts.

Whereas various sources testify to the presence of a Celtic field system at the location of the settlement site, it remains problematic to combine the data. Although the aerial photographs can be georeferenced to present-day maps of Hijken and its surroundings, it was not possible to relate the photographs to the excavation results directly. In the past, the exact location of the excavation was measured from features in the direct vicinity (*e.g.* forested plots and fence posts) that could not be retraced with much precision. Consequently the exact location of the excavation plans could be off by several meters. However, it was possible to combine the locations of the Celtic field banks from the 1950's aerial photographs with the locations of the banks as noted on the original field drawings thus offering a more accurate positioning of the excavation as a whole (Fig. 12).

While there is a clear *association* between the banks and the fences, their relative chronology remains unclear. From the field notes it can be inferred that sections of the banks were dug, but none were recorded. The excavators have always assumed that the fences predate the Celtic field and formed a blueprint for it (Harsema, 1987b: 39; Harsema, 1980: 20-21), but the field notes indicate that in some cases fence-posts (stakes of wattle-work fences?) were struck down into the (tops of) banks

and must therefore have post-dated them. Whether this holds true for all fences or only for particular parts, will remain unsolved.

As none of the fences with an ENE-WSW orientation cross-cuts houses dating from the Early to Middle Iron Age occupation phase (and in the case of house 10 even seem to swerve around the house plan), but do overlap with house 18, a dating of the fences in the Early to Middle Iron Age phase seems most likely. If we assume that most of the fences indeed predate the Celtic field, bank formation must have started *before* (or at latest during) the Early to Middle Iron Age occupation phase. This is in line with recent OSL (Optically Stimulated Luminescence) dating of Celtic field banks elsewhere (Arnoldussen, 2014: 74-67).

Whereas the start of bank formation of Hijken Celtic field may have taken place early in the Iron Age (*cf.* Harsema, 1990: 41(171)), its origin may go even further back: the orientation of the Bronze Age houses (perpendicular to that of the Iron Age houses) corresponds to one of the axes of orientation of the Celtic field banks. The possibility that the spatial layout of the Bronze Age landscape could have influenced the properties (such as orientation, and location) of the Iron Age cultural landscape (*i.e.* settlement and Celtic field) had previously been dismissed because of the assumed hiatus in habitation of several centuries between the Bronze- and Iron Age (Harsema, 1991: 78). Our reinterpretation of the settlement site, however, has shown that habitation continued from the Middle Bronze Age to the Middle to Late Iron Age (*supra*), suggesting that orientation of cultural landscape structures may have been more durable than hitherto assumed (*cf.* Harsema, 1987a: 111; Arnoldussen, 2008a: 301-306; 421-429).

Both house 18 (Middle to Late Iron Age) and the contemporary granary (v62/63) are located at the same location as a Celtic field bank, but whether they were constructed on top of a bank or whether the bank was (somewhat) levelled, remains unclear. For the fence-posts that were noted to have been driven into the bank tops, a Middle to Late Iron Age is possible, but not necessary. It could equally well be that – throughout the development of the banks – fence lines flanked or crested them. It may very well be that the process of placing uprooted weeds along the fences that delimited the fields, sparked bank development; (*cf.* Arnoldussen 2014, 92). If indeed the Celtic field in its form of embanked fields developed out of (or accompanied by) a fence-line system, and the first banks were erected during the Early to Middle Iron Age occupation phase, then not all the houses are placed conveniently in a field plot as the traditional models suggest (Harsema, 2005: 548; Jager, 2008: 13, 104). Houses 1, 16, 17 and 22 are situated within a field plot, but houses 2, 3, 8, 9, 20 are located either partially, or completely, at the same location as a Celtic field bank. Evidently, the relations between (the placement of) houses and the locations of banks of the Celtic field system are more variable



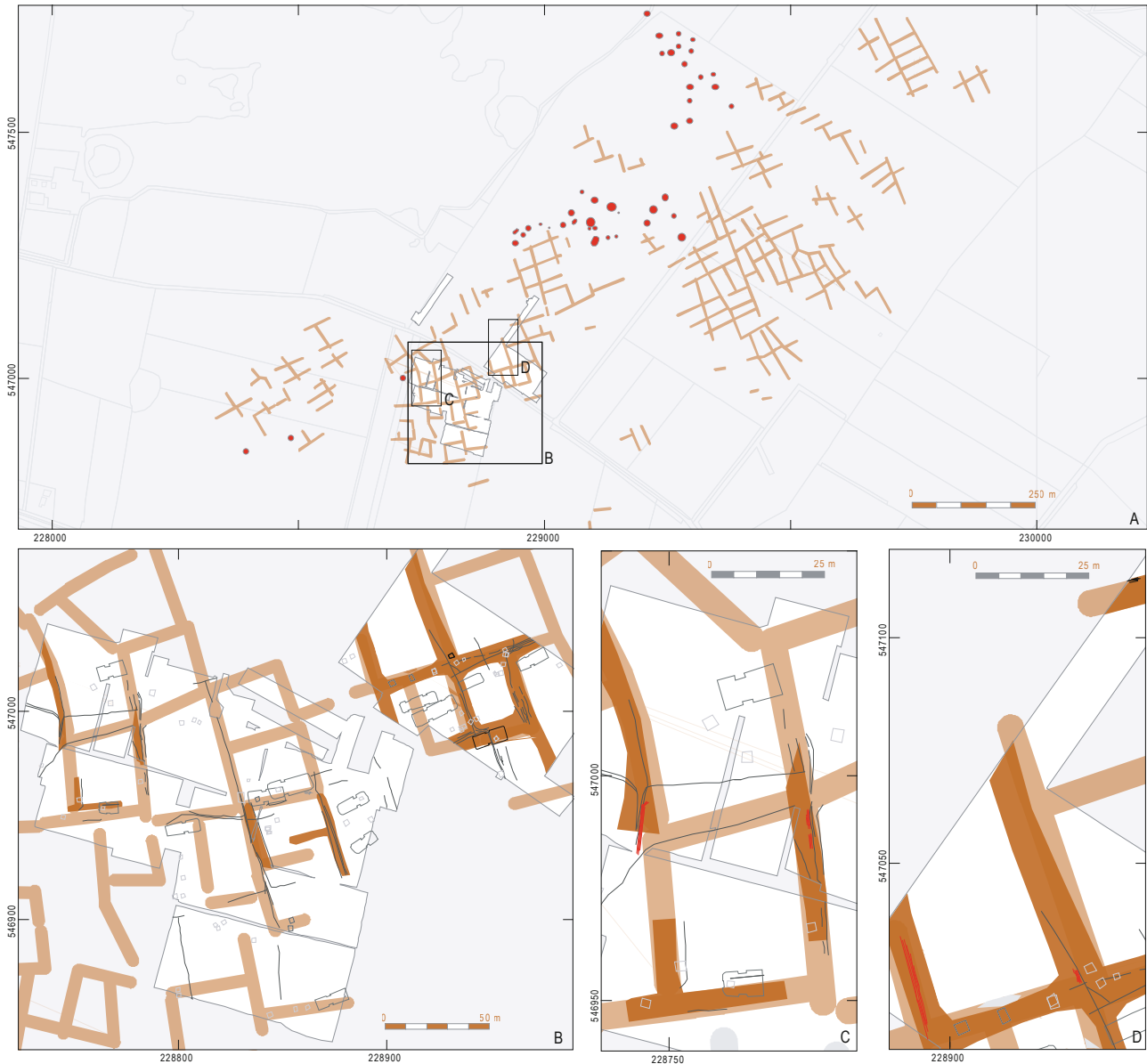


Fig. 12. Overview (A) showing the location of the Hijkerveld Celtic field banks (light brown polygons), as traceable from a 1950's aerial photograph, in relation to the excavation extents, known barrows and topography. Inset B shows the Celtic field ridges (light brown polygons) overlain with the location of Celtic field 'ridges' as noted during fieldwork (darker brown polygons). The Late Iron Age structures are shown in black outlines, the Early to Middle Iron Age structures are shown as dark-grey outlines, the outbuildings that cannot be dated in light-grey outlines. Additionally, insets C and D show the location and directions of bundles of ard-marks (red outlines) north of the Leemdijk. Drawing S. Arnoldussen (Groningen Institute of Archaeology, Groningen, the Netherlands).

than 'simply inhabiting a (former field-)plot within the Celtic Field' (*cf.* Arnoldussen & Jansen, 2010: 385-386; Arnoldussen, 2014: 4; 20), and partial levelling of banks prior to house construction is an often overlooked option.

## 7. CONCLUDING REMARKS

A re-evaluation of the evidence from the site of Hijken-Hijkerveld has led to a fuller understanding of its human occupation from the Single Grave Culture up to the Middle

to Late Iron Age. It has become clear that the phasing of the habitation site is more complex, but also more continuous, than was previously assumed. The first proof for human occupation must be placed in the Middle Bronze Age, but habitation continued during the Late Bronze Age, Early Iron- to Middle Iron Age, and spanned into the Late Iron Age. Moreover, the corresponding orientation of the Bronze Age houses to (one of the axes of) the Celtic field system suggests a long-term durability of the local cultural landscape orientation. A striking feature is that the house plans from the Iron Age occupation phases show

a wide diversity in construction, and are predominantly not of the eponymous ‘Hijken-type’ for which the site is best-known. The houses that *do* belong to the Hijken-type occur both in the Early to Middle Iron Age occupation phase and Middle to Late Iron Age occupation phases. Evidently, the assumed traditional date-range for houses of ‘Hijken-type’ (Middle to Late Iron Age; Huijts, 1992: 67-72; Waterbolk, 2009: 55) must be expanded to incorporate the Early Iron Age as well. Moreover, the Hijken excavations call for renewed critical attention towards Iron Age house-typology in general, as many of the Iron Age Hijken houses – despite being well-reserved – cannot be fitted within current typochronologies. Finally, the difficult interrelation of houses, fence-systems and Celtic field banks at Hijken merit more detailed study of habitation patterns within Celtic fields elsewhere, to determine whether the traditional view of farms amidst fields actually holds true.

## 8. NOTES

1. We dedicate this publication to the late Otto Harsema, who supervised the 1969-1973 excavations and has published on various aspects of the Hijken sites. Unfortunately, the second author could only meet with him in person twice to discuss our narrative of the Hijken occupation history, as Otto passed away in September 2013 after an unfortunate accident.
2. See also Archis numbers (wrn.) 239671, 239677 and 239689.
3. See also Archis numbers (wrn.) 239666, 239677 and 12152.
4. Finds no. 1969-39.
5. Finds no. 1972-“vlak werkput A”.
6. Finds no. 1970-91.
7. Finds no. 1969-38.
8. Finds no. 1969-38.
9. See also Archis numbers (wrn.) 238822 and 238824.
10. Finds no. 1969-38.

## 9. REFERENCES

- ARNOLDUSSEN, S., 2008a. *A Living Landscape. Bronze Age settlement sites in the Dutch river area (c. 2000-800 BC)*. Leiden (PhD thesis), Sidestone press.
- ARNOLDUSSEN, S., 2008b. *Appendices to: A Living Landscape. Bronze Age settlement sites in the Dutch river area (c. 2000-800 BC)*. Leiden, Sidestone press.
- ARNOLDUSSEN, S., 2014. *De Celtic fields van Wekerom: kleinschalige opgravingen van wallen en velden van een laat-prehistorisch raatakkersysteem*. Groningen, GIA (Grondsporen 18).
- ARNOLDUSSEN, S. & R. JANSEN, 2010. Iron Age habitation patterns on the southern and northern Dutch Pleistocene coversand soils: The process of settlement nucleation. In: M. Meyer (ed.), *Haus – Gehöft – Weiler – Dorf. Siedlungen der vorrömischen Eisenzeit im nördlichen Mitteleuropa. Internationale Tagung an der Freien Universität Berlin vom 20.-23. März 2009*. Rahden (Berliner Archäologische Forschungen 8), 379-397.
- BAKKER, J.A., 1979. *The TRB West Group - Studies in the Chronology and Geography of the Makers of Hunebeds and Tiefsch Pottery*. Amsterdam (PhD thesis), Universiteit van Amsterdam.
- BECKERMAN, S.M., 2013 (2011/2012). Dutch beaker chronology re-examined, *Palaeohistoria* 53/54, 25-64.
- BOS, J.M., H.T. WATERBOLK, J. VAN DER PLICHT & E. TAAYKE, 2002 (1999/2000). Sporen van ijzertijdbewoning in de terpzool van Wommels-Stapert (Friesland), *Palaeohistoria* 41/42, 177-224.
- BOURGEOIS, Q.P.J., 2013. *Monuments on the horizon. The formation of the barrow landscape throughout the 3rd and 2nd millennium BC*. Leiden (PhD thesis), Sidestone press.
- BOURGEOIS, Q.P.J. & S. ARNOLDUSSEN, 2006. Expressing monumentality: some observations on the dating of Dutch Bronze Age barrows and houses, *Lunula Archaeologia protohistorica* 14, 13-25.
- BROEKE, P.W. VAN DEN, 2002. Een vurig afscheid? Aanwijzingen voor verlatingsrituelen in ijzertijd nederzettingen. In: H. Fokkens & R. Jansen (eds.), *2000 Jaar bewoningsdynamiek. Brons- en IJzertijd bewoning in het Maas-Demer-Scheldegebied*, Leiden, Leiden University, 45-61.
- BROEKE, P.W. VAN DEN, 2012. *Het handgevormde aardewerk uit de ijzertijd en Romeinse tijd van Oss-Ussen. Studies naar typochronologie, technologie en herkomst*. Leiden (PhD thesis), Sidestone Press.
- BROEKE, P.W. VAN DEN, H. FOKKENS & A.L. VAN GIJN, 2005. A prehistory of our time. In: L.P. Louwe Kooijmans, P.W. van den Broeke, H. Fokkens & A.L. van Gijn (eds.), *The Prehistory of the Netherlands* (I), Amsterdam, Bert Bakker, 17-31.
- BRONGERS, J.A., 1973. 1833, *Reuven in Drenthe; een bijdrage tot de geschiedenis van de Nederlandse archeologie in de eerste helft van de negentiende eeuw*. Bussum, Unieboek b.v.
- BUTLER, J.J., 1969. *Nederland in de Bronstijd*. Bussum, Fibula-Van Dishoeck (Fibulareeks 31).
- BUTLER, J.J., 1990. Bronze Age metal and amber in the Netherlands (I), *Palaeohistoria* 32, 47-110.
- BUTLER, J.J. & H. FOKKENS, 2005. From stone to bronze. Technology and material culture. In: L.P. Louwe Kooijmans, P.W. van den Broeke, H. Fokkens & A.L. van Gijn (eds.), *The Prehistory of the Netherlands* (I), Amsterdam, Bert Bakker, 371-399.
- DRENTHE, E., 2005. Het laat-neolithicum in Nederland. In: J. Deebe, E. Drenth, M.-F. van Oorsouw & L.B.M. Verhart (eds.), *De steentijd van Nederland*, (Archeologie 11/12), Meppel, Stichting Archeologie, 333-365.
- DRENTHE, E. & E. LOHOF, 2005. Mounds for the dead. Funerary and burial ritual in Beaker period, Early and Middle Bronze Age. In: L.P. Louwe Kooijmans, P.W. van den Broeke, H. Fokkens & A.L. van Gijn (eds.), *The Prehistory of the Netherlands* (I), Amsterdam, Amsterdam University Press, 433-454.
- ES, W.A. VAN, 1970. Paddepoel; excavations of frustrated terps, 200 BC-250 AD, *Palaeohistoria* 14, 187-352.
- FOKKENS, H., 1998. *Drowned Landscape. The Occupation of the Western Part of the Frisian-Drenthian Plateau, 4400 BC - AD 500*. Assen (PhD thesis), Van Gorcum.
- FOKKENS, H. & D.R. FONTIJN, 2013. The Bronze Age in the Low Countries. In: H. Fokkens & A. Harding (eds.), *The Oxford handbook of the European Bronze Age*, Oxford, Oxford University Press, 550-570.

- FONTIJN, D.R., 2003. *Sacrificial Landscapes. Cultural biographies of persons, objects and 'natural' places in the Bronze Age of the southern Netherlands, c. 2300-600BC*. Leiden (PhD thesis), Leiden University (Analecta Praehistorica Leidensia 33/34).
- GERRITSEN, F., 1999. To build and abandon. The cultural biography of late prehistoric houses and farmsteads in the southern Netherlands, *Archaeological Dialogues* 6.2, 78-97.
- GERRITSEN, F., 2003. *Local identities. Landscape and community in the late prehistoric Meuse-Demer-Scheldt region*. Amsterdam, Amsterdam University Press (Amsterdam Archaeological Studies 9).
- GIFFEN, A.E. VAN, 1937. Twee grafvelden uit den hunebedden- en bekestijd in het Kruidhaarsveld bij Sleen, gem. Sleen, *Nieuwe Drentsche Volksalmanak* 55, 8-11.
- GIFFEN, A.E. VAN, 1938. Continental bell or disc barrows in Holland with special reference to tumulus I at Rielsch Hoefke, *Proceedings of the Prehistoric Society* 4, 258-271.
- GIFFEN, A.E. VAN, 1939. Tumulus 43 in het Hijkerveld, gem. Hijken. Oudheidkundige aantekeningen over Drentsche vondsten (III), *Nieuwe Drentsche Volksalmanak* 57, 130-131.
- GIFFEN, A.E. VAN, 1943. *Opgravingen in Drenthe*. In: J. Poortman (eds.), *Drente: een handboek voor het kennen van het Drentsche leven in voorbije eeuwen*, Meppel, Boom, 391-564.
- HARSEMA, O. H., 1970. Kroniek van de opgravingen en vondsten in Drenthe in 1969, *Nieuwe Drentsche Volksalmanak* 88, 47-52 (175-180).
- HARSEMA, O. H., 1972 (1971/1972). Kroniek van opgravingen en vondsten in Drenthe in 1969, *Nieuwe Drentsche Volksalmanak* 89, 47 (175)-52 (180).
- HARSEMA, O.H., 1974. Archeologisch onderzoek op het Hijkerveld, gemeente Beilen. Voorlopig bericht over de opgravingen 1969 en 1970, *Nieuwe Drentsche Volksalmanak* 91, 161-168.
- HARSEMA, O.H., 1980. *Drents boerenleven van de bronstijd tot de middeleeuwen*, (Museumfonds Publicatie 6), Assen, Drents Museum.
- HARSEMA, O.H., 1987a. Change and continuity in rural settlement in Drenthe from the Neolithic onwards: a reconsideration of traditional and current opinions, *Palaeohistoria* 29, 103-118.
- HARSEMA, O. H., 1987b. *De archeologische betekenis van het Hijker Noorderveld en zijn omgeving*, Groningen, BAI (unpublished report).
- HARSEMA, O.H., 1990. Drenthe's plaats en rol in de ijzertijd, *Nieuwe Drentsche Volksalmanak* 107, 169-179.
- HARSEMA, O.H., 1991. *De bronstijd-bewoning op het Hijkerveld bij Hijken*. In: H. Fokkens & N. Roymans (eds.), *Nederzettingen uit de bronstijd en de vroege ijzertijd in de Lage Landen*, (Nederlandse Archeologische Rapporten 13), Amersfoort, Rijksdienst voor het Oudheidkundig Bodemonderzoek, 21-29.
- HARSEMA, O. H., 1992. Bronze Age habitation and other archaeological remains near Hijken, province of Drenthe, the Netherlands. In: C. Mordant & A. Richard (eds.), *L'habitat et l'occupation du sol à l'âge du bronze en Europe. Actes du Colloque international de Lons-le-Saunier, 16-19 mai 1990*, (Documents préhistoriques 4), Paris, Comité des travaux historiques et scientifiques, 71-87.
- HARSEMA, O. H., 1997. House form, farmstead and settlement structure in the northern Netherlands in the Middle and Late Bronze Age. In: H. Beck & H. Steuer (eds.), *Haus und Hof in ur- und frühgeschichtlicher Zeit*, Göttingen, Vandenhoeck & Ruprecht, 137-161.
- HARSEMA, O. H., 2005. Farms amongst Celtic fields. Settlements on the northern sands. In: L.P. Louwe Kooijmans, P.W. van den Broeke, H. Fokkens & A.L. van Gijn (eds.), *The Prehistory of the Netherlands (II)*, Amsterdam, Amsterdam University Press, 543-556.
- HIELKEMA, J.B., A.J. BROKKE & B.H.F.M. MEIJLINK, 2002. Sporen en structuren. In: B.H.F.M. Meijlink & P. Kranendonk (eds.), *Archeologie in de Betuweroute: Boeren, erven, graven. De Boerengemeenschap van De Bogen bij Meteren (2450-1250 v. Chr.)*, (Rapportage Archeologische Monumentenzorg 87), Amersfoort, Rijksdienst voor het Oudheidkundig Bodemonderzoek, 137-291.
- HOLWERDA, J.H., 1912. Opgraving aan het Uddelermeer, *Oudheidkundige mededelingen uit het Rijksmuseum van Oudheden te Leiden* 6, 1-16.
- HOOF, L.G.L. VAN, 2002. 'En zij begroeven zich een huis'. Structuur en levensloop van een ijzertijderf in de Zuid-Limburgse lösszone. In: H. Fokkens & R. Jansen (eds.), *2000 Jaar bewoningsdynamiek. Thema's in het metaaltijdenonderzoek*, Leiden, Faculteit Archeologie, Universiteit Leiden, 73-93.
- HUIJTS, C.S.T.J., 1992. *De voor-historische boerderijbouw in Drenthe; reconstructiemodellen van 1300 vóór tot 1300 na Chr.* Arnhem, Stichting Historisch Boerderij Onderzoek.
- JAGER, S. W., 2008. *Celtic fields in Zuid-Drenthe: archeologisch vooronderzoek: een inventariserend bureauonderzoek*. Weesp, RAAP Archeologisch Adviesbureau (RAAP rapport 1731).
- JANSEN, L.J.F., 1848. *Drenthse Oudheden*. Utrecht, Kemink & Zoon.
- KOOI, P.B., 1979. *Pre-Roman urnfields in the north of the Netherlands*. Groningen (PhD thesis), Wolters-Noordhoff.
- LANTING, J.N. & J. VAN DER PLICHT, 2002 (1999/2000). De <sup>14</sup>C chronologie van de Nederlandse Pre- en Protohistorie III: Neolithicum, *Palaeohistoria* 41/42, 1-110.
- LANTING, J.N. & J. VAN DER PLICHT, 2003 (2001/2002). De <sup>14</sup>C chronologie van de Nederlandse Pre- en Protohistorie IV: Bronstijd en Vroege IJzertijd, *Palaeohistoria* 43/44, 117-261.
- LANTING, J.N. & J. VAN DER PLICHT, 2006 (2005/2006). De <sup>14</sup>C chronologie van de Nederlandse Pre- en Protohistorie V: Midden- en Late IJzertijd, *Palaeohistoria* 47/48, 241-427.
- LOHOF, E., 1991a. *Grafritueel en sociale verandering in de bronstijd van Noordoost-Nederland*, Amsterdam (PhD Thesis).
- LOHOF, E., 1991b. *Catalogus van bronstijd-grafheuvels uit Noordoost-Nederland*. Amsterdam (PhD thesis).
- LOHOF, E., 1994. Tradition and change. Burial practices in the Late Neolithic and Bronze Age in the north-eastern Netherlands, *Archaeological Dialogues* 1, 98-118.
- MEIJ, L. VAN DER, 2010. *Project bestemmingsplan Daalkampen II te Borger. Locatie: Klokbeek. Een archeologische opgraving in de gemeente Borger-Odoorn*. Amersfoort, ADC ArcheoProjecten (ADC Rapport 2065).
- MULDER, E. F. J. DE, M. C. GELUK, I. L. RITSEMA, W. E. WESTERHOFF & T. E. WONG, 2003. *De ondergrond van Nederland*. Groningen, Wolters-Noordhoff.
- PIGGOTT, S., 1965. *Ancient Europe from the beginnings of agriculture to classical antiquity: a survey*, Edinburgh, Edinburgh University Press.
- PRUMMEL, W., M.J.L.TH. NIEKUS, W. VAN DER SANDEN, S. ARNOLDUSSEN & G. AALBERSBERG, 2009. Bronstijdstreken

- uit het Oude Diep. Archeologisch onderzoek op een beekdallocatie bij Hoogeveen, *Nieuwe Drentsche Volksalmanak* 126, 125-160.
- STIBOKA, E., 1978. *Bodemkaart van Nederland : schaal 1:50.000*. Toelichting bij de kaartbladen 17 West Emmen en 17 Oost Emmen, Wageningen.
- TAAYKE, E., 1995. Die einheimische Keramik der nördlichen Niederlande, 600 v.Chr. bis 300 n.Chr., Teil II: Drenthe, *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* 41, 9-102.
- TAAYKE, E., 1996. Die einheimische Keramik der nördlichen Niederlande, 600 v. Chr. bis 300 n. Chr., Teil V: Übersicht und Schlussfolgerungen, *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* 42, 163-208.
- UFKES, A. & S. BLOO, 2002. Aardewerk. In: B.H.F.M. Meijlink & P. Kranendonk (eds.), *Archeologie in de Betuweroute: Boeren, erven, graven. De Boerengemeenschap van De Bogen bij Meteren (2450-1250 v. Chr.)*, (Rapportage Archeologische Monumentenzorg 87), Amersfoort, Rijksdienst voor het Oudheidkundig Bodemonderzoek, 317-426.
- VEEN, M. VAN DER & J.N. LANTING, 1991. A group of tumuli on the 'Hooghalen' estate near Hijken (municipality of Beilen, province of Drenthe, the Netherlands), *Palaeohistoria* 31 (1989), 191-234.
- VELDE, H. M. VAN DER, A. VAN BENTHEM & S.B.C. BLOO, 2001. *Een huisplaats uit de late Bronstijd te Dalſen. Archeologisch onderzoek aan het bedrijventerrein Welsum te Dalſen*. Bunschoten, Archeologisch Diensten Centrum (ADC Rapport 95).
- VELDE, H. M. VAN DER, H. VAN HAASTER, E. A. K. KARS, P. VAN RIJN, TH. SPEK, L. SMITS & E. TAAYKE, 2003. Archeologisch onderzoek langs de snelweg. *Opgravingen in het kader van de aanleg van de Rijksweg 37: Het Hoolingerveld bij Knooppunt Holsloot*. Bunschoten, ADC (ADC Rapport 156).
- VERWERS, G.J., 1972. *Das Kamps Veld in Haps in Neolithikum, Bronzezeit und Eisenzeit*. Leiden (PhD thesis), (Analecta Praehistorica Leidensia 5).
- WATERBOLK, H.T., 1959. Overzicht van het praehistorisch onderzoek in Drenthe in 1958, *Nieuwe Drentsche Volksalmanak* 77, (3) 187-(22) 206.
- WATERBOLK, H.T., 1960. Preliminary report on the excavations at Anlo in 1957 and 1958, *Palaeohistoria* 8, 59-90.
- WATERBOLK, H.T., 1962. Hauptzüge der eisenzeitlichen Besiedlung der nördlichen Niederlande, *Offa* 19, 9-46.
- WATERBOLK, H.T., 1964. The Bronze Age settlement of Elp, *Helinium* 4, 97-131.
- WATERBOLK, H.T., 2009. *Getimmerd verleden. Sporen van voor- en vroeghistorische houtbouw op de zand- en kleigronden tussen Eems en IJssel*. Utrecht, Matrijs.
- ZEIST, W. VAN, 1955. *Pollen analytical investigations in the northern Netherlands, with special reference to archaeology*. Amsterdam (PhD thesis UvA).