ORIENTATIONS OF THE DUTCH *HUNE*BEDDEN

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Introduction

In the northern Dutch provinces of Drenthe and Groningen is a cluster of Neolithic passage graves belonging to the TRB (*Tricherrandbecher*, or Funnel Beaker) Culture. These form part of the Western Group, the remainder of which is found in western Germany; the other two groups are the Altmark Group in Northern Germany, and the North Group, which reaches southern Scandinavia. In the region of interest for this paper, the TRB culture is estimated to date from about 3400 to 2850 B.C.¹

Although there is no good archaeological reason for considering the Dutch group in isolation from the remainder of the Western Group, we shall do so for the purposes of this preliminary study, leaving for the near future a comparative study with data from the German graves. There are 76 known sites of passage graves in the Netherlands, although some are now destroyed.² Fifty-two sites are sufficiently well preserved for measurements to be possible.

In a flat and sandy country such as the Netherlands, it is perhaps surprising to encounter megalithic monuments with stones up to a tonne in weight. However, they are all located in an area known as the “Hondsrug”, or Dog’s Back, a low ridge running from the city of Groningen in the north to Emmen in the south (see Figure 1). This ridge was created as a result of glacial action, which was also responsible for depositing a number of large erratic boulders.

These monuments are known in the Netherlands as the *hunebedden*, or ‘giants’ beds’. Like other conspicuous monuments, the *hunebedden* have been subject to interference ever since they were built. In particular, some of their stones can be seen in nearby medieval churches. However, in 1734–35 the Province of Drenthe, concerned at the removal of stones for use in the construction of dams, passed a law to protect the monuments. In the nineteenth century, the State and the Province of Drenthe began to buy the fields where the *hunebedden* were located, again with the intention of protecting them. Restoration work followed, but unfortunately it was widely believed at this time that the tumuli were dunes that had arisen through natural causes and covered up the true structure of the monument. Thus, much of the ‘restoration’ work consisted of removing the mound to leave the stones uncovered. And this is the aspect they present today.

During the early to mid-twentieth century, many of the *hunebedden* were excavated, conserved and restored, by J. H. Holwerda and more especially by A. E. van Giffen. Van Giffen assigned each monument a code based on the province where they were

FIG. 1. The *hunebedden* are located on a low ridge, the “hondsrug”.

located (D-Drenthe, G-Groningen) together with a number. Some of the conservation work involved considerable risk. For example, *hunebed* D53 in Havelte, one of the largest in the Netherlands, had to be demolished during the Second World War, by German orders, to build an airfield. Van Giffen marked all the stones and recorded their positions, and at the end of the war carefully put them all back in place.³

The state of preservation of many of the *hunebedden* before van Giffen came on the scene was poor. However, he managed to establish the original position of many of the stones and today most of the monuments have undergone major restoration following excavation. Of course, we must bear in mind that errors in the measurements of orientation may have been introduced as a result.

The finds resulting from these excavations and restoration were mainly fragments

of decorated pottery. Few other remains have been found in the chamber fill, the soils in the area being too acid for human or animal remains to have survived. Offerings have been recovered from entrances to the tombs⁴ and these are similar to those found in Scandinavia.⁵

While the origins and role of these monuments within the TRB society remains a matter of debate,⁶ it seems clear that building them required a high degree of technological skill along with ample manpower, and this in itself implies a complex social organization. Once we start to explore their possible meanings, the question of their orientation cannot be ignored.⁷ If they conformed to a common ritual tradition, or seasonal factors influenced their construction or use, then certain patterns in their orientations might be expected. This is the possibility we investigate here.

The Sample

The monuments considered here have several pairs of orthostats (from two to as many as 14 or 15) forming a chamber, which is roofed with a number of slabs. An orthostat closes each end of the chamber. The entrance is located always close to the middle of the southerly side of the *hunebed*. Many of the entrances have between one and three pairs of orthostats, giving to the overall monument a “T” shape (see Figure 2).

FIG. 2. Site plans for two of the *hunebedden*: (above) D15 is an example of a *hunebed* of middle size with a kerb (P-type); (below) D19 is a fairly large *hunebed* without kerb (N-type). In both, the entrance is in the middle of the south side and formed of several orthostats.

FIG. 3. Two examples of *hunebedden*: (*above*) D17-Rolde is catalogued as N1, note D16 in the background; (*below*) D50-Noordsleen catalogued as P2, note the surrounding kerb.

Of the 56 *hunebedden* catalogued by van Giffen, one (Grand Dolmen, G5⁸) was moved to the local museum in Delfzijl shortly after its discovery in the early 1980s, to save it from destruction during the building of a factory, and of course its original orientation cannot now be measured. In Table 1 we give our measurements of the orientations of 52 of the remaining 55 *hunebedden*. No data are given for three sites: D33 was in such bad condition that van Giffen used some of its stones to rebuild D34 nearby; D44 (uniquely) is still on private land, and very damaged; and D48 is a huge single slab and not a *hunebed* as supposed by van Giffen.

In the table we give the type of passage grave, following Bakker's classification:⁹ *N* denotes a simple grave without a peristaltic kerb, *P* a grave with a kerb, and *Q* a so-called *langbett*, a long-grave enclosing more than one passage grave and with a kerb. There is only one type-*Q* grave in the Dutch group, though others can be found in neighbouring Germany. The number (*N*0, *N*1, etc) indicates the number of pairs of orthostats marking the entrance. Orientations were measured using a precision compass and clinometer, and taken from both ends of the graves. In some cases, for example where the *hunebed* chamber is not straight (possibly due to errors in the reconstruction, or to shifting of the stones over time, or perhaps as originally intended) an estimate of the (larger than usual) error introduced is given. Where it was feasible to measure the orientation of the entrance, this is also given. In nearly every case the horizon altitude was close to zero, the two exceptions being the horizon in the direction of the entrance orientations at D53 and D54 (2° and 3° respectively). Measurements were corrected for magnetic declination. The last two columns give the geographical coordinates, measured with a GPS. Where this was not possible, the values have been taken from the literature and are marked with an asterisk.

Location and Orientation

In Figure 1 we show the distribution of the *hunebedden* in the landscape. As already mentioned, they are located within a broad band lying between Groningen and Emmen, on ground that is somewhat higher than the surroundings; in Neolithic times, it would probably have been surrounded by bogs.¹⁰ The mean elevation of this area is 12–15 metres above sea level. Baldia¹¹ has suggested that they are clustered around a Neolithic routeway.

Van Giffen, in 1927,¹² stated that most of the *hunebedden* have an east–west orientation, but he offers no statistical analysis. Baldia,¹³ who collected literature measurements of 2385 chambers from all over the TRB culture area, also finds no clear pattern. But lumping all the monuments together in this way would fail to reveal any practices specific to a particular locality, and furthermore he divides the circle into just 16 sectors, too coarse a bin size to reveal any detailed trends in the data.

If we plot the mean azimuths (Figure 4) of the *hunebedden* we can see immediately that there is a clear general trend in favour of east–west, rather than north–south, orientations. We also see a broad concentration around due east (mean 94°, standard deviation 3σ). A large proportion of the chamber orientations lie between the extreme

TABLE 1. Measurement data for *hunebedden*.

<i>Hunebed</i>	Type	Chamber Azimuth	Passage Azimuth	Latitude ° ' "	Longitude ° ' "
D1	N1	79	161	*53 6	6 25
D2	N1	84	163	*53 4	6.27
D3	N1	99	192	53 6 27	6 40 21
D4	N1	90	185	53 6 27	6 40 21
D5	N1	106	194	*53 3	6 32
D6	N0	121		*53 5	6 38
D7	N0	81	167	53 3 41.6	6 41
D8	N0	73		53 3 36.7	6 42
D9	N1	85	184	*53 4	6 43
D10	N0	104		*53 2	6 39
D11	N1	112	193	*53 1	6 42
D12	N0	146		*53 1	6 43
D13	N0	69	168	53 0 41	6 43 37
D14	P2	99±2	182	53 00 07	6 43 51
D15	P2	112	194	*53 1	6.37
D16	N1	82±2	177	*53 0	6 37
D17	N1	108	206	52 59 23.5	6 38 58.9
D18	N1	87	178	52 59 25.6	6 38 59.9
D19	N2	119	205	52 57 8.3	6 47 9.2
D20	P2	96	184	52 57 8.1	6 47 10.6
D21	N1-0	46±2		52 56 40.2	6 48 3
D22	N0	73.5		52 56 40.7	6 48 3.4
D23	N0	95.5±2		52 56 40.8	6 48 19.7
D24	N0	89.5		52 56 40.8	6 48 19.7
D25	N0	72.5		52 56 40.6	6 48 19.7
D26	P2	66	155	*52 57	6 46
D27	N2	109.5	201	52 55 48	6 47 48
D28	N0	99		52 55 34.4	6 48 42.2
D29	N1	71	162	52 53 33.5	6 48 43.2
D30	N1	170.5	78.5	52 53 30.5	6 50 47
D31	N1	119	202	52 52 5	6 52 16.6
D32	N0	68		52 51 25.3	6 50 23.7
D33					
D34	N1	138.5	230	52 50 34.3	6 52 5
D35	N0	89.5		52 50 7.7	6 52 16.7
D36	N1	104.5	193	52 50 24.1	6 53 42.5
D37	N0	99		52 50 24	6 53 43.6
D38	N1	44	143	*52 49	6 53
D39	N0	25		*52 49	6 53
D40	N1	163.5	77	*52 49	6 53
D41	N0	72.5		*52 48	6 53
D42	N0	129.5±2		*52 48	6 53
D43N	Q1	17.5	98	52 47 36.2	6 53 15.2
D43S	Q1	17.5	99	52 47 36.2	6 53 15.2
D44					
D45	P2	77.5	174	*52 48	6 55
D46	N0	96		*52 47	6 56
D47	N0	159.5		*52 47	6 56
D48					
D49	P2	117	215	*52 49	6 45
D50	P2	87.5±2	177	*52 47	6 48
D51	N2	72.5	160	*52 47	6 48
D52	N1	55	152	*52 52	6 20
D53	P2	74	163	*52 48	6 13
D54	N1	112	197	*52 48	6 13
G1	N2	120±2	210	53 6 57	6 39 30
G5

FIG. 4. Azimuth of the chambers. Most lie within the range of sunrise/sunset and moonrise/moonset. The figure on the left shows the eastern azimuth for each chamber; dashed lines indicate the extreme positions of the moon while dotted-dashed lines indicate the solstices. The figure on the right shows a histogram with the same data.

positions of sunrise (and sunset, a range of 83%) and moonrise (and moonset, 88%). On the other hand, while Reijds¹⁴ has claimed more specific alignments upon particular rising and setting points of the sun and moon, such as full moonrise immediately before the equinox, the same author admits that his explanation lacks consistency, and we find no evidence to support these detailed claims. On the other hand, the pattern of orientations is fully consistent with the sun rising/climbing//descending/setting model proposed by Hoskin.¹⁵

When the passage graves were built, the chambers were covered with an earthen mound that in many cases was elliptical or kidney-shaped, the mound being added after the chamber had been completed. It is possible that the chamber was oriented towards the sun or moon on the day of construction, even though the view in that direction would have been physically impossible after the tomb was covered.

Offerings were made at the entrance after construction of the monument¹⁶ indicating a ritual practice there. The entrance was open, and as previously mentioned is always located on the southerly side of the tumulus, which would be in accordance with the avoidance of northerly directions proposed by Hoskin.

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