

1. Introduction

The project entitled "The Passage Graves in Central Västergötland and Their Background" started in 1985 as a co-operative enterprise between the Department of Archaeology at Göteborg University and the Skaraborg County Museum. Financial support was obtained chiefly from the Swedish Council for Humanistic and Social Science Research.

The project continued to the end of the 1980s and into the 1990s. In all nine passage graves were excavated during the fieldwork. In addition, examinations were made of material from three, previously excavated, passage graves. The results of these investigations are reported in this book. Excavations of settlement sites dating from the same period as the passage graves have also been carried out within the scope of the project. These investigations will be published later, together with a study of the bone finds from the dwelling sites, a pollen analysis and other research which illustrates the source of livelihood during the period when the passage graves were built.

Below, the passage graves are designated by the place-name, followed by the parish and the number (in parentheses) in the register of ancient monuments maintained by the National Heritage Board (Raä).

II. Passage-grave investigations

The excavations of the passage graves were primarily aimed at investigating the depositions in front of the entrances to the passages and at examining a section through the mound down to the Neolithic ground surface. With the exception of the Rössberga grave, the depositions at the entrances had not previously been investigated in Falbygden. The construction of the mounds and the different phases in this construction were unknown. The ground surfaces under the mounds might also yield information on how the ground was being used at the time when the passage grave was built. In one case (Hjelmar's Cairn), the chamber in one of the passage graves was also investigated.

The investigations have concerned different parts of Falbygden: Gökhem in the west, Falköping, Karleby, Torbjörntorp and Valtorp in the central part, Hångsdala in the south-east and Axvalla Moor in the north (see Fig. 13).

Investigations on Axvalla Moor (Figs. 14 and 16)

The passage graves on Axvalla Moor are well known on account of the excavations carried out there by Lindgren at the beginning of the 19th century, when five passage graves were removed. The area has a great potential, since it has long been a military training ground and has therefore not been cultivated in modern times. However, within the framework of the project, the investigations in the area were on a modest scale. They were restricted to a minor excavation on the site of one of the passage graves which were removed at the beginning of the 19th century (Tora's grave, Skärv, Raä 82).

Toras grave (Skärv, Raä 82)

The excavation took place in 1986 and included three trenches (Rooseveltsson 1992). On the site, traces were found in the ground surface which could be interpreted as the remains of a passage grave that had been removed (Fig. 17). The mound was c. 24 metres in diameter and was preserved to a height of 0.5 metre. The grave had presumably had an oval chamber, which was c. 6 metres long and was oriented in the north-south direction, with a slight inclination to the east. The passage had run at right angles from the chamber to the east and had been c. 5 metres long.

Part of the area in front of the entrance was examined (Fig. 20). Only a few finds emerged: only three potsherds, one of which was decorated (Fig. 21), and two flint chips and a fragment of a chip. South-east of the entrance, a remaining facing slab was found (Figs. 17 and 19): this shows that the passage grave had had

an inward-curving part in front of the entrance and that this had presumably had facing slabs. In front of the entrance, there was also flooring made of gneiss slabs.

Investigations in Falköping (Figs. 22 and 23)

The town of Falköping is situated in the centre of the distribution area of the passage graves in Västergötland (Figs. 13, 22 and 23). There is a compact group of 13 passage graves in the town and there are several in more scattered locations in the east and north-east. During the 19th century, several investigations of passage graves were made in Falköping. Among other things, in 1868 the Hildebrands (father and son) examined four of them in the town. In the course of our project, one of these (Hjelmar's cairn, Falköping town, Raä 3) was examined afresh. Furthermore, material from a passage grave which was excavated in the 1970s at Fredriksberg (Falköping town, Raä 25) was studied as part of the project. These two graves are situated in the eastern part of Falköping (fig. 23).

Hjelmar's Cairn (Falköping town, Raä 3)

Hjelmar's Cairn was investigated within the framework of the project on three occasions (in 1994, 1995 and 1998) (Strinnholm 1995, Axelsson & Persson 1995 and 1999). On the first of these occasions, the excavation was arranged in the same way as the other excavations within the framework of the project, with a trench in front of the entrance and another dug through the mound (Fig. 25). On the two later occasions, the chamber was examined.

After the turf had been removed, a stone packing appeared in the area in front of the entrance to the passage (Fig. 28). Under this packing, a layer containing finds of, among other things, funnel-beaker pottery was encountered. This indicates that the cairn came into existence after the pottery deposits ceased. In the cairn, finds dated to the Bronze Age were encountered, and it is possible that the cairn itself came into existence during this period, in connection with later burials.

Among the finds made in front of the entrance, especially pottery (Figs. 31-34) and flint may be noted. The pottery consists of 419 sherds, of which 157 are decorated, and it can be dated to MN I-IV, according to the southern-Scandinavian, pottery typology (Fig. 37). Judging from the different fragments of mouths, the number of vessels can be estimated as at least 22. The pottery occurs in an area which begins c. 3 metres out~ side the passage entrance. The distribution area is well demarcated towards the east, while the limits towards the north and south are unclear (Fig. 29A). Among the flint finds from the entrance area, several chips and chip fragments may be noted. Two whole chips were encountered by the passage entrance (Fig. 29B). The chip fragments, as well as other flints and fragments of polished flint axes, were to a large extent burnt. Only a few fragments of the burnt bones which are otherwise common in front of the entrances to passage graves in Falbygden were encountered at Hjelmar's Cairn.

In the excavation, the outermost stones of the passage wall were found, but no facing slabs. However, as the trench was narrow immediately in front of the entrance, it is not out of the question that facing slabs may be found a little further to the north and south. The passage is 5.5 metres long, up to 1 metre wide and 0.8 metre high. The orientation is almost due east-west.

Hjelmar's Cairn is surrounded by a mound c. 25 metres in diameter and c. 1.5 metres high. There is a slight indication of a central mound with a diameter of c. 12 metres.

The trench through the mound at Hjelmar's Cairn extended all the way from the outside edge of the mound to the exterior of the chamber (Figs. 41-46). One of the aims in digging the trench was to try to demonstrate different phases in the building of the mound. We did not succeed in this, as the profiles do not show any clear stages in the extension. Several secondary grave structures dating from the Bronze Age and later were encountered in the trench. Together with nine interpolated finds dating from the post-Neolithic period, these

structures are projected in the profile in Fig. 36. Together with the character of the stone material, this gives two alternative interpretations of the original appearance of the mound (Fig. 43).

Another aim in digging the trench through the mound was to procure data about the use of the land in the period before the building of the passage grave. Next to the chamber, there was a layer of moraine, which was dug up when one of the slabs in the chamber wall was put into place (Fig. 45). This layer overlaid a layer containing earth c. 10 centimetres thick, which was thus a remnant of the Neolithic ground surface. However, examinations of this earth did not yield any clues as to the land use. There were no more than a few, small fragments of charcoal, and no pollen was preserved in the earth.

In the trench, the construction of the chamber could also be studied from the outside. In the same way as had already been observed in southern Scandinavia, these observations showed that the interstices between the slabs in the chamber wall had been carefully mortared (Fig. 46).

When this passage grave was investigated by the Hildebrands in 1868, it was noted that there was a large quantity of human bones in the chamber, but these bones could not be found in the museum collections. The chamber was therefore excavated afresh with a view to taking care of the finds which might remain there.

The chamber was 5.5 metres long and 2.5 metres wide and had an almost north-south orientation. It was built of eight wall slabs and three roof blocks and was filled with earth and stones. Its shape was not rectangular; it had one wall that curved to the west. About one-third of the filling consisted of stones with sizes up to 0.5 metre. These stones may originally have been included in the packing between the roof blocks.

Human bones greatly predominated among the finds in the chamber. In all, 43 kilograms of bones were found, which may be compared with the 67 kilograms which came to light in the investigation of the Rössberga passage grave. It is therefore reasonable to assume that the number of persons buried at Hjelmar's Cairn may have been of the same order as at Rössberga, i. e. about 100. No osteological analysis of the bones from Hjelmar's Cairn has yet been made. Eight 14C-datings have been made of the bones (Fig. 50).

The most common artefacts found in the chamber are amber beads (Fig. 45). There are nearly 100 beads from the Hildebrands' excavation and a further 40 beads came to light in the fresh investigations. These amber beads are of the types which are commonly found in passage graves; they are usually shaped like double-edged axes, like clubs or like thin-butted axes. A small number of flint objects was also derived from the chamber, including a couple of chips (Fig. 51). Sherds of two vessels also came to light in the fresh investigation (Fig. 52). These were probably from two vessels placed in the chamber. One may be ascribed to the Funnel Beaker Culture and the other possibly to the Pitted Ware Culture.

Many of the niche slabs noted in the Hildebrands' excavation were encountered in the chamber. From these, it could be shown that the existing plans of the 1868 excavation are broadly correct (Figs. 53-55). The niche slabs which were still in place could be measured more accurately (Fig. 55). Some of the niches were so small that they could never have contained a corpse (Fig. 56). The niche slabs had been set into the chamber floor without any visible excavations. Nothing certain can be said about the age of the niches; however, the absence of bones under the floor level argues that the niches were installed during an early phase. The floor of the chamber was not specially marked. Under the layers containing filling from the Hildebrands' excavation, a layer of dark soil with no finds emerged; this layer became gradually lighter lower down.

In the investigation of the chamber, dry walling came to light between two of the wall slabs (Fig. 57). It is especially noteworthy that the Hildebrands did not note these wall slabs in the 1868 excavation.

Fredriksberg (Falköping town, Raä 25)

This passage grave was investigated and removed in 1970 by what was then called the Central Office of National Antiquities. It had already been badly damaged before the excavation. Two standing slabs were all that remained of the passage and only one of the wall slabs in the chamber was still in place. Nothing can be said about the size of the chamber, but its orientation was north-south and the passage ran straight eastwards. The mound was only partly preserved, but it seems to have been 25 metres in diameter and up to 0.9 metre high.

In front of the entrance, four flints, six burnt bones and 315 pieces of pottery were found in an area of c. 3 square metres. This was probably an entrance deposit, but in this case the find area was probably much damaged. There was no trace of the entrance cairn which is normally present. A standing limestone slab can, however, be interpreted as a facing slab.

It is chiefly the pottery finds that make this passage grave interesting. The pottery is of Middle Neolithic, funnel-beaker type, but its character differs from that which is known from other passage graves in Falbygden. The decoration is consistently placed on the outside of the mouth or on the belly, and it is simpler than what is normally the case. In the cases in which the vessel shape can be determined, they are small funnel beakers. Brim beakers, which are common from other passage graves, do not occur here. There is pottery which can be assigned to MN I-III but also pottery which may belong to MN IV-V and one sherd which may belong to a Pitted-ware vessel. Five sherds from one vessel have what was probably painted decoration in the form of angular lines. Judging from the number of different pieces from mouths, there are at least 10 vessels in the find.

Investigations in Gökhem

The parish of Gökhem is situated in the most westerly part of Falbygden (Figs. 13 and 64). There are a good 20 passage graves in the parish, but none of them had been excavated before 1985. In the northern part of the parish, they are assembled relatively well to form a group along the western edge of the limestone plateau (Fig. 65). In the southern part of the parish, they are more scattered (Fig. 66). Three of these passage graves were the subjects of fieldwork in our project. Furthermore, the passage grave at Landbogården was investigated by archaeologists from Stockholm University, and material from it was also dealt with within the framework of the project.

Gökhem was the subject of a settlement-archaeology investigation by Schnell (1966). The map in Fig. 67 comes from this investigation and shows the Neolithic finds in relation to the water sources in the area. Schnell concluded that the settlement was situated near the water sources and that this was owing to the fact that cattle played a great part in the food supply. However, it is doubtful whether this conclusion can be maintained as far as the Neolithic finds are concerned. The Neolithic finds appear chiefly on the limestone plateau but not markedly near water sources.

Landbogården (Gökhem, Raä 17)

This passage grave was investigated in 1987 within the framework of a project directed by Lars Bägerfeldt, of the Department of Archaeology at Stockholm University (Bägerfeldt 1987, Blomqvist & Bägerfeldt 1987, Blomqvist & Blomqvist 1988). In the excavation, the remaining parts of the passage grave were completely investigated.

The passage grave is in one of the northern parts of Gökhem parish. It is one of the smallest passage graves in Falbygden and the rectangular chamber measured 2.7 x 1 metre. This chamber was oriented almost north-south, with a slight inclination to the west (Fig. 68). The passage was at right angles to the chamber and was 4 metres long. The area round the grave had been heavily ploughed and only remnants of the mound remained.

The chamber and the passage were relatively well preserved, in spite of the fact that all the roof blocks were missing. In the chamber, a layer of bones came to light, containing the bones of at least ten persons. The bones derive partly from scattered occurrences in the chamber and partly from four skeletons from burials in the crouched position (Figs. 58 and 61). Besides bones, only a few finds were encountered in the chamber; of these, five fragments of amber beads, two flints and perhaps also two animal teeth were probably part of the grave goods.

Outside the chamber, a complete skeleton emerged which had been placed across the passage during the Iron Age. In the passage, a remarkable package containing the bones of at least one adult and a child (Fig. 60) was found. Its dating is unclear, as the 14 C-dating has a large standard deviation (Fig. 59:2), but it is reasonable to suppose that the package, which was placed there only after the passage had become disused, derives from the end of the Middle Neolithic.

In the chamber, the four burials in the crouched position form a stratigraphic sequence. The deepest burial was that of skeleton E and this has been given the earliest dating hitherto for a person buried in a Nordic megalithic tomb (Fig. 590-7). The stratigraphically later skeletons C and D have also been given a somewhat later 14C-dating (Fig. 59:8). The datings of the scattered skeletal remains in the chamber indicate almost a Late Neolithic date for them (Fig. 590-4).

The observations made in the Landbogården passage grave are unique. This is not only because it is the earliest instance of burial in a Nordic megalithic tomb but also because it is the only case in the Nordic countries in which it is possible to say anything about how the burials were designed during the first phase.

Nästegården (Gökhem, Raä 31)

The passage grave was investigated on three occasions, in 1985, 1986 and 1987 (Wattman 1993). The excavation was arranged with two trenches, one through the western part of the mound and the other in front of the entrance area (Fig. 75).

This grave is one of those situated in the northern part of Gökhem parish. It has a chamber whose size is estimated to be 8 x 2.5 metres and whose orientation is north-south, with an inclination to the east. The passage is at right angles to the chamber and is c. 6 metres long and 1.2 metres wide. The grave is situated in a mound which is up to 26 metres in diameter and e. 2 metres high. The mound has a terrace and a central mound next to the chamber.

On account of the coarse stone material in the infilling, the trench through the mound came to extend only 5 metres in from the edge of the mound (Fig. 76). A layer which was interpreted as the Neolithic ground surface emerged from under the mound filling, but no observations were made which could be connected with the land use before the mound was built. A 14C-dating of some charcoal from the trench indicated a Mesolithic age (Fig. 78:1), which does not tell us much about the date of the passage grave. At the very end of the trench, there emerged a horizontal lime stone slab which may have been an overturned facing slab and may indicate that the whole mound was surrounded by a circle of slabs standing on their edges.

In the trench in front of the entrance to the passage, three, horizontal, limestone slabs were encountered; they are probably facing slabs which have been overturned (Figs. 79 and 80). One and a half metres in front of the entrance, an area measuring 4 x 3 metres containing ceramic finds was discovered (Fig. 76). The greater part of this area was situated in arable land but was nevertheless comparatively well preserved; however, the remains of an entrance cairn were found to be preserved only next to the passage grave (Fig. 79). Among the ceramic finds of more than 2000 sherds, there were c. 500 decorated sherds which all derived from Middle Neolithic, funnel-beaker pottery. From the number of different fragments of mouths, the number of vessels was estimated to be at least 59. In the southern-Scandinavian chronology, they date from MN I-IV.

The pottery was very fragmented, but nevertheless three vessels could be reconstructed (Fig. 82) and the scattering of the sherds which belong to these three vessels does not show any great distribution (Fig. 83). These three vessels may have been among the last to be deposited and in that case they show that the fragmentation of the earlier pottery had already taken place during the Neolithic.

In all, 160 flints were found in the entrance area and 70% of them were damaged by fire. The flints include chips and fragments of chips, together with fragments of polished axes, and the greater parts of both these categories are burnt. The fragments of polished axes include fragments of at least two different axes.

In front of the entrance, bones of three different categories were encountered (Fig. 85). Unburnt human bones were found next to the entrance to the passage and presumably came from burials in the chamber. One of these bones has been 14C-dated to the Middle Neolithic (Fig. 78:2). Unburnt animal bones were found north of the entrance. One of these has been 14C-dated to historical time. Finally, the burnt animal bones were found within an area which, on the whole, corresponds to the distribution of the pottery. One of the burnt bones has also been 14C-dated to the Middle Neolithic (Fig. 78:3). Among the burnt bones were also noted especially 10 fragments of sheep bone and 9 of pig bone (Fig. 86). This may be evidence of the importance of agriculture during the Neolithic. One of the potsherds bore the impression of a barley corn.

Gravabacken (Gökhem, Raä 71)

The passage grave at Gravabacken was examined on two occasions (in 1985 and 1986) (Bågenholm, Persson & Sjögren 1993). To begin with, the excavation was planned to have a trench dug through the north-western part of the mound and another in front of the entrance in the east. Later, the investigation was widened to include several trenches in the surroundings of the passage grave (Fig. 87). These trenches were intended to locate the remains of dwelling sites and will not be treated in any detail in this connection.

The passage grave is situated in the southern part of Gökhem parish (Fig. 56). It lies in a mound 22 metres in diameter and 2 metres high and has a slightly marked, central mound (Fig. 100). The chamber measures c. 6 x 2.5 metres and is oriented north-by-north-east. The passage does not seem to be altogether at right angles to the chamber but deviates somewhat to the north. It is c. 6 metres long.

The trench through the mound came to extend only 2 metres from the edge of the mound (Fig. 101). The boundary of the mound was shown by two sandstone slabs, which were probably part of a kerb around the mound. The slabs had an inclination of about 45 degrees (Fig. 102) but had presumably stood erect originally.

Similar slabs can be seen on the surface in two stretches in the northern and eastern parts of the mound (Fig. 100). Under the mound, a culture layer containing finds of pottery, flint and bone appeared. The pottery may be ascribed to the Funnel-beaker Culture and is of dwelling-site character (Fig. 103). It also occurs outside the boundary of the mound, but its frequency decreases greatly to the west. It may come from a dwelling-site layer which existed on the site before the passage grave was built, but the 14 C-dating of a cattle bone found in the culture layer makes the interpretation more complicated. The dating indicates that it originated c. 2300 BC, which is presumably 1000 years after the passage grave was built. The most reasonable interpretation of this is that the mound was enlarged and did not reach its present size until the Late Neolithic.

The area in front of the entrance had largely been ploughed up. North of the entrance, there were two sandstone slabs which had formed a frontage, which had turned in towards the entrance. South of the entrance, there was only one such sandstone slab (Figs. 96 and 98). Further to the south, at the place where one might have expected to find the next facing slab, there was instead a round granite pillar. This agrees with the fact that on the surface of the mound there appears a kerb of rounded stones along the southern side of the mound, while along the northern edge of the mound the kerb consists of flat sandstone slabs. Under

the entrance cairn, there appeared the inner part of a floor made of limestone flags. A similar floor emerged also outside the edge slab at the back of the passage grave. The grave was probably surrounded by a kerb of limestone flags.

In front of the entrance, only 31 decorated potsherds were found, owing to the fact that the greater part of the area where pottery was expected to be found had been ploughed up. A large proportion of these potsherds can be ascribed to the Middle Neolithic, Funnel beaker Culture. There were also some potsherds which could be ascribed to the Battle-axe Culture. A human bone from the entrance area has been dated to c. 2250 BC, i.e. to the Late Neolithic. An interesting detail in this connection is that the bone was found under the entrance cairn, which had thus come into existence during the Late Neolithic at the earliest.

The Orma Cairn (Gökhem, Raä 78)

This passage grave was excavated in 1985 (Sjögren 1992). The excavation consisted of one trench through the mound and two trenches where it could be assumed that the entrance was situated. A stone wall which ran round the grave limited the possibilities of positioning the trenches and therefore in this case the trench goes through the mound immediately south of the entrance.

The grave is situated in the southern part of Gökhem parish and in the most south-westerly part of Falbygden (Figs. 54 and 56). The mound is up to 24 metres in diameter and 1.5 metres high. Around the chamber, there is a central mound c. 8 metres in diameter and 0.6 metre high. Only three roof blocks of the chamber are visible; from these, the orientation can be determined as north-south. The chamber is 5-6 metres long. Only one roof slab of the passage is visible, directly east of the chamber (Fig. 116).

In this case, the trench through the mound came to have a very limited extent and the bottom was reached in a stretch only 2 metres long (Fig. 104). In the infilling, burnt human bones were found here, which indicates a secondary burial. Under the infilling, a culture layer containing finds of pottery, burnt animal bones and flint was encountered. A large potsherd presumably came from a funnel beaker almost of Early Neolithic type (Fig. 109). A C14-dating made on charcoal from the layer has given the date c. 3150 BC (Fig. 107); this may indicate the earliest date when the passage grave can have been built.

In this case, the trench in front of the passage yielded only isolated finds of undecorated potsherds. It was not possible to ascertain either the position of the passage entrance or any other constructional details which could be connected with the entrance.

Investigations in the Rössberga area

In the parishes of Torbjörntorp and Valtorp, there is a well defined group of nine passage graves (Figs. 110 and 111). One of these is the Rössberga passage grave (Valtorp, Raä 2), which was investigated in 1962 (Cullberg 1963). The finds from this excavation were studied in the project and a further three passage graves in the area were investigated.

The area is situated on the edge of the limestone plateau and to the west is the Åsle valley, which today is characterised by extensive peat bogs. In this area, the limestone bedrock is covered by only a thin layer of soil.

Tomten (Valtorp, Raä 42)

The passage grave at Tomten was excavated in 1986 (Heimann & Sjögren 1987). The excavation consisted of two trenches, one situated on the northern edge of the mound and the other in the area in front of the entrance. This passage grave has a chamber which measures c. 9.5 x 3 metres and is almost rectangular in shape. Its orientation is north-south, with a slight inclination to the east. Like the passages of other graves in the vicinity, the 9-metre-long passage is slightly curved and in its outer part it runs almost in a directly east-west direction (Fig. 112).

The mound was 25 metres in diameter and barely 1 metre high. The chamber is surrounded by a low, circular bank c. 3 metres wide and with an internal diameter of 11-12 metres. The mound was built mainly of stone (Fig. 113). In the upper part of the infilling, pottery was found which indicates secondary burials in the Bronze and Iron Ages. Under the mound, traces of an old ground surface came to light. Soil samples were collected from this ground surface, but none of them yielded any further information about what the ground was used for before the passage grave was built.

In front of the entrance, a stone packing was encountered which extended up to the edge of the arable land c. 2.5 metres outside the entrance. A couple of horizontal limestone slabs in connection with the entrance may be facing slabs that have fallen over. Isolated potsherds, flints, burnt bones and a miniature battle-axe were found in the stone packing. Only three of the potsherds found can be ascribed to the Funnel-beaker Culture; two of them have decoration which can be ascribed to MN III-IV. There is remarkably little funnel-beaker pottery at Tomten, compared with the two adjacent passage graves of Rössberga and Jakobsberg. However, it is difficult to decide whether this reflects the original situation or whether it is due to the pottery being preserved to different extents in the passage graves.

At Tomten, sherds were also found from at least two vessels which can be ascribed to the Battle-axe Culture or Late Neolithic times. The battle-axe which was found in the stone packing was of type E2 in Malmer's classification (1962:). The finds from the Battle-axe Culture were encountered in the entrance cairn and show that this cairn was built at the earliest at the end of the Middle Neolithic.

At the entrance, a deposit of five flint chips was discovered. One of them had been struck from a double-pole core and therefore probably dates from the end of the Middle Neolithic.

Hallabrottet (Torbjörntorp, Raä 12)

The Hallabrottet passage grave was excavated in 1985 (Sjögren 1992). The excavation was made through two trenches, one through the north-western part of the mound and the other in front of the entrance to the passage.

The grave is surrounded by a circular mound c. 19 metres in diameter and 1.1 metres high (Fig. 130). Next to the chamber, the mound is level and there is a circle of relatively small stones; the circle has a diameter of c. 9 metres. The chamber is 5.5 metres long and 1.75 metres wide. It was oriented northeast-southwest. In the excavation, the two outermost wall slabs in the passage were found. This showed that the passage did not run at right angles from the chamber but had an inclination to the north. The passage was 7.5 metres long.

The greater part of the mound infilling consisted of stone. The only finds from the infilling were a stone flake and a little charcoal. The charcoal was dated to 7600 BC, which is much earlier than the date when the passage grave was built. Under the mound, what was interpreted as the original ground surface was discovered. Soil samples were collected from the trench. A pollen sample from the bottom of the trench showed a vegetation which consisted mainly of pine and birch with no great interspersion of open ground. It is not certain that this reflects the situation during the Neolithic, since pollen can be transported through the layers of soil. Phosphate analyses do not show any enhanced contents under the mound, which presumably means that there was never a dwelling site here.

In the trench in front of the entrance, an entrance cairn was found and in connection with the entrance an overturned facing slab. In the entrance cairn, 11 potsherds, of which five were decorated, were found. All the decorated sherds can be ascribed to the Funnel beaker Culture. Two sherds derive from "silkar" (ceramic sieves), a kind of vessel which has been connected with the making of cheese. However, the find circumstances do not allow of any reliable dating of the "silkar" sherds at Hallabrottet.

The quantity of finds made in front of the entrance at Hallabrottet is very small. It is possible that this is owing to the fact that this passage grave lies on the fringe of a larger group (Fig. 123).

Jakobsberg (Valtorp, Rab 1)

This passage grave was investigated in 1987 and 1988 (Sjögren 1988). A trench measuring 36 square metres was examined in front of the entrance to the passage.

The grave is situated in a mound which is c. 30 metres in diameter and 1,3 metres high. On top of it are the remains of a croft which was situated here at the end of the 19th century. Next to the chamber is an oval central mound measuring 15 x 12 metres; outside this is a terrace which is between 6 and 3 metres wide (Fig. 134). The chamber is 15.5 metres long and 2.7 metres wide. This means that it is one of the largest passage graves in the Nordic countries. It is oriented in the north-south direction. The passage does not start from the middle of the chamber but is placed nearer the southern gable. It is 9.5 metres long. Its orientation is east-west next to the Chamber but it curves somewhat to the south in the outer part.

In the trench in front of the entrance, a stone packing was discovered which was 0.5 metre thick next to the passage but which became thinner the further it extended to the east (Figs. 137-8). North-of the entrance to the passage, a facing slab was encountered. In the stone packing, pottery dating from the Late Neolithic and the Iron Age and a Late Neolithic, shafthole axe were discovered, which indicates that the stone packing came into existence at the earliest during the Late Neolithic. The funnel-beaker pottery emerged especially in

the lower part of the stone packing and in the soil below it. This soil was interpreted as the Neolithic ground surface.

In all, almost 800 potsherds were discovered. Half of them are decorated. Most of the pottery is Middle Neolithic, funnel beaker pottery. It consists of thin sherds (6-8 millimetres thick) from small vessels. The diameter of the mouth was, as a rule, less than 15 centimetres. Judging from the different types of mouth fragments, at least 62 vessels are represented in the material. The most common kind of vessel is the brim beaker. Funnel beakers are also common and, in addition, there are a couple of bowls in the material.

In spite of the fact that the chamber at Jakobsberg is the second largest in Falbygden, with a length of 15.5 metres, the quantity of pottery is not greater here than at the other, well preserved, entrance areas which have been investigated. Thus, there is nothing to indicate that there is any direct connection between the chamber size and the quantity of pottery.

In a comparison between the pottery from Jakobsberg and that from Rössberga, it is quite evident that there are clear stylistic differences. This appears not only from the differences in patterns, fillings and techniques but also from such details as the thickness of the engraved lines. The Jakobsberg pottery is distinguished in this respect by its very finely engraved lines, while the lines on the Rössberga pottery are distinctly coarser. Judging from the southern-Scandinavian, pottery chronology, there does not seem to be any chronological difference between the pottery materials from the two graves. It is therefore likely that the different pottery styles were associated with different social groups.

Several sherds from three of the vessels have been found and the distribution of these sherds has been mapped (Fig. 149).

The pottery lies in an area of c. 25 square metres right in front of the entrance to the passage and at a distance of a couple of metres from it. The main concentration is 3-4 metres in front of the passage. As the finds decrease evenly towards the edges of the trench, we may reckon that most of the find area has been examined.

The flint finds appear in a more scattered fashion, but there are differences between different categories of flints. The distribution of burnt flint coincides with that of the pottery, while unburnt chips and fragments of chips show concentrations alongside the passage (Fig. 150).

Burnt bones have the same distribution area as the Middle Neolithic pottery and the burnt flint. A burnt pig bone has been 14 C-dated to the Middle Neolithic period. In this case, the species of the other burnt bones were not determined.

Rössberga (Valtorp, Raä 2)

The passage grave at Rössberga was excavated by Carl Cullberg in 1962 (Cullberg 1963). This is still the most extensive investigation which has been made of a passage grave in central Västergötland, but the find material has hitherto been only preliminarily treated. The excavation comprised the chamber, the passage and the area outside the passage, together with large parts of the mound. The chamber measured c. 9 x 2 metres, and the orientation was north-south, with a slight inclination to the east. The chamber was not rectangular and the western long side was curved. There were four roof blocks over it. The wall slabs were inserted down to the bedrock, which here is only 0.15 metre below the ground surface. The wall slabs were leaning over when excavated, but on the basis of their length the height of the chamber roof could be calculated as c. 2 metres. The chamber was divided by small slabs into small compartments (what are called niches). Twelve niches could be distinguished, in the southern part of the chamber and eight in the northern part, but originally there were probably more. Between some of the wall slabs, there was sealing made of dry walling.

The mound round the passage grave was c. 25 metres in diameter. Next to the chamber, it consisted of a cairn, which propped up the wall slabs and was up to a metre high. Further from the chamber, the mound was very flat.

The passage was 8 metres long, ran towards the east and was slightly curved. It was asymmetrically positioned, so that it lay north of the middle of the chamber. The internal height of the passage was c. 1 metre.

In front of the entrance to the passage, there was a somewhat thicker, stone packing (the entrance cairn). Under this were found horizontal slabs which had originally been vertical and formed a facade wall. This extends both north and south of the passage for a distance of a good 10 metres. The cairn was thickest next to the entrance. In and under the cairn were found pottery, flints and burnt bones. The cairn is secondary in relation to the passage grave. It is not clear when the cairn was built, but, judging from the finds, it was probably during the Late Neolithic at the earliest.

In the chamber and the passage, a layer of black, greasy, find-bearing soil, consisting of an almost cohering mass of bone was encountered. The human bones originated from at least 128 individuals, and a small quantity of animal bones was included, especially bones of pigs (see Ahlström's contribution). The bones were mingled together, apparently in a disorderly fashion. The layer of bones was c. 30 centimetres thick, and in it were also found amber beads, flint objects and a number of bone objects. The amber beads were the most common finds in the chamber (in all, 61 whole beads were found). It is noteworthy that no pottery was found in the chamber.

The pottery finds were concentrated into an area measuring 3 x 3 metres, a few metres directly outside the passage (Fig. 152). In all, a good 800 sherds were found. The vessels were small, most of them having a mouth diameter of between 10 and 15 centimetres. The most common kind of vessel was the funnel beaker, followed by the brim beaker. The material also included a few bowls. The number of vessels can be estimated as at least 65. The pottery is richly decorated and, in accordance with the southern-Scandinavian pottery typology, the MN I-IV phases are represented. The pottery includes fragments from at least two vessels that can be ascribed to the Battle-axe Culture.

If the pottery from Rössberga is compared with that from Jakobsberg, which is situated only a good 100 metres away, great differences in the decoration can be seen between them. This applies to both patterns and decorative technique.

Six vessels are represented by more than five sherds, and the distribution of sherds from one and the same vessel may be studied in greater detail in these cases (Fig. 154). The sherds which belong to one and the same vessel are found near each other, as a rule, which indicates that these vessels were deposited at the site and that the distribution picture is not due to secondary influence.

In the area where the pottery was found, flints (some of which were burnt) and burnt bones were also found. In association with the entrance and the facing slabs, several flint chips were found; they were not burnt. In this case, the species to which the burnt bones belong have not been determined.

Bones from 16 different individuals have been 14 C-dated (Fig. 156). Half of the dated bones originated from men and half from women. All the bones came from adult individuals.

Investigations in Hångsdala

One idea behind the project was to investigate different parts of Falbygden. One of the areas which were selected was Hångsdala in the most south-easterly part of the distribution area of the passage graves. Within the framework of the project, a passage grave (Långe Cairn, Valstad, Raä 8) was examined in this area. A settlement survey was also carried out in Hångsdala.

The bedrock in the Hångsdala area is limestone. The boundary between the limestone and the primary rock runs through the area and gives rise to a marked borderline in the vegetation and the cultivated landscape. This borderline runs c. 400 metres east of the passage graves. The bedrock does not crop out above the surface but is covered by thick layers of moraine. In this area, the moraine is fine-grained and consists mainly of sandy-to-gravelly soil.

There are 11 passage graves in the area, nine of which are situated on ridges round a zone with peat soils which runs through Hångsdala parish (Figs. 157-8).

One of the earliest excavations of passage graves in Falbygden was carried out here by Melin in 1812. At that time, the question that attracted the greatest attention was whether the graves had been built by giants and whether the skeletal remains of these giants would be found. In 1862, two passage graves in the area were investigated by Säve. Large quantities of bones were found in these investigations, but they were not preserved. It was noted that the chamber was divided into niches. A small number of artefacts encountered in the chamber was preserved. Especially noteworthy was the finding of the pierced tooth of a bear.

In the settlement survey which was made in Hångsdala within the scope of the project, five localities were found which had finds which can be ascribed to the Funnel Beaker Culture. These finds were all flint material collected on the surface.

Långe Cairn (Valstad, Rad 8)

This passage grave was investigated in 1986 and 1987 (Englund & Sjögren 1993). Three trenches were dug, one in front of the entrance, one through the mound and the third for the purpose of locating the passage.

The mound round the grave was c. 30 metres in diameter and up to 2.5 metres high. In the middle, there are three visible roof blocks marking the position of the chamber. The mound was of a complex construction. There is a central mound with depressions round the chamber in the form of two furrows. Outside the central mound is a terrace and outside this the mound again slopes continuously downwards. Around the south-western half of the central mound, there was a 3-6 metre wide belt of stones measuring c. 0.5 metre. These stones were rounded gneiss. They were probably laid secondarily on parts of the central mound. This would seem to have been an addition in connection with burials in the mound during the Bronze Age or the Iron Age.

Nothing is to be seen of the wall slabs in the chamber but, judging from the roof blocks, it had a northeast-southwest orientation. Two roof blocks in the passage are to be seen on the surface. They lie at right angles to the chamber. The irregular trench upon the mound was dug in an attempt to find the continuation of the passage, but this attempt did not succeed. The position of the passage could not be established with any certainty, but it is most likely that it runs at right angles to the chamber and is c. 7 metres long.

In the trench through the mound, large, rounded stones which may have been a kerb came to light. Outside this, there emerged a cavity-wall construction which is presumably much later than the passage grave. In connection with this, iron slag was also found. Over a stretch of 4.5 metres, the trench was dug down to the bottom. Under the cairn, there was a layer with an admixture of humus which may be the remains of the Neolithic ground surface. No finds or other observations were made which told us anything about how the land was used before the passage grave was built.

In the shaft in front of the entrance, a stone packing up to 0.7 metre thick was encountered. In this, there appeared parts of what may have been a stone circle. Inside this, there emerged a layer of dark soil and finds of burnt human bones and pottery of Bronze Age or Iron Age character (Fig. 175). This was interpreted as a secondary burial. Under the stone packing and the dark layer in the shaft, there was a reddish-brown layer which was interpreted as the Neolithic ground surface. From this layer, there emerged finds of Neolithic pottery, flints and burnt bones.

The Neolithic pottery amounted to c. 1400 sherds, of which xxx were decorated. This pottery was found especially in an area which lies at right angles to the chamber. No direct traces of the passage could be demonstrated in the excavation. The concentration of pottery at Långe Cairn is not as distinct as at other passage graves in Falbygden (Fig. 176).

The Neolithic pottery consists of small, richly decorated funnel beakers and brim beakers. There are also some sherds which may have originated from bowls. A couple of sherds may derive from vessels which resemble the southern-Scandinavian shoulder vessels with acute-angled transitions between neck and belly. The decoration on the pottery may be ascribed to the southern-Scandinavian periods MN I-IV with the greatest concentration in MN II-III.

The flint material included a large proportion of chips. Half the flint was burnt, but this applied to a somewhat smaller extent to the chips. Unburnt chips occurred chiefly in the western part of the shaft, approximately where the passage should be. A fragment of a thin-necked axe made of Häståsabergr diabase was also found in front of the entrance. The raw material of this axe does not occur in Falbygden and the nearest occurrence is in the Borås district at a distance of c. 50 kilometres.

In the same way as at several other passage graves, burnt animal bones were found in front of the entrance at Långe Cairn, The species to which these bones belonged could be determined in only two cases and in both they were the bones of pigs. Burnt human bones were also found, but these would seem to have been connected with a secondary burial during the Bronze Age or the Iron Age.

In one decorated potsherd, there was the impression of a grain of wheat.

Analyses of soil samples were carried out, but they did not yield much information as regarded determining what the land was used for before the passage grave was built. It is noteworthy that the phosphate contents are consistently low in all samples and that this argues that there was no settlement at the site, nor any deposits of food offerings in front of the entrance.

IV. Discussion

Datings

The Falbygden passage graves were long regarded as a comparatively late phenomenon in relation to the southern-Scandinavian sequence of megalithic tombs. However, the approximately 40 14C-datings which have been carried out within the scope of the project give a new picture of the chronological circumstances.

One group of four datings originates from the mounds and the dates are therefore, in principle, stratigraphically earlier than those of the passage graves. One dating of material from a culture layer under Gökhem no. 78 indicates a date of c. 3100 BC (Fig. 107). It may be reasonable to assume that the grave was built after this time. A dating of material from a culture layer under Gökhem no. 71 yielded a date of c. 2200 BC. The interpretation in this case is that the mound can not have been enlarged to its present size until about 1000 years after the chamber was built. The remaining two datings from the mound indicate a date in the Mesolithic.

The large number of datings carried out were made on the bones of the persons buried. In principle, all these datings are stratigraphically later than the megalithic tomb. The earliest burial at Landbogården is dated to c. 3500 BC. Since this individual is the hitherto earliest dated corpse in any Scandinavian megalithic tomb, it is likely that this tomb marks the beginning of passage-grave building in central Västergötland. Bones from a megalithic tomb on Gotland have been dated to the same period (Lindqvist 1988). The most likely interpretation is that the megalithic tombs began to be built c. 3500 BC over the whole distribution area in the Scandinavian countries.

From Rössberga, there are datings of 16 individuals, a figure which is equivalent to c. 10% of those buried. Furthermore, there is a series of eight datings from Hjelmar's Cairn. In these two series, most of the burials are dated to the Middle Neolithic, while the contribution of Late Neolithic and later datings is marginal. This

is interesting in comparison with southern Scandinavia, where there is a marked contribution of Late Neolithic burials.

Two excavated megalithic tombs in Falbygden have been classified as dolmens--Slutarp (Kinneved, Raä 21) and Falköping West no. 20 (Falköping West, Raä 7). From each of these, the bones of five individuals have been dated. These dates fall in the same period as the passage graves. The same applies if we look at the dolmens in southern Scandinavia (Fig xx). Thus, it is impossible to maintain the old idea that the dolmens are older than the passage graves. Nor are the megalithic tombs in southern Scandinavia earlier than those in Falbygden.

For southern Scandinavia, Ebbesen (1975, 1979) has drawn up a detailed chronological classification of the Middle Neolithic² funnel-beaker pottery. If this classification is used to date the Falbygden passage graves, they must have been built at the latest at the beginning of the Middle Neolithic. This is because pottery belonging to the first phase of the Middle Neolithic always occurs. On the other hand, Early Neolithic pottery is absent. This may be due to the fact that the custom of depositing pottery first began in the Middle Neolithic or that only a few graves were built during the Early Neolithic.

The situations of the passage graves

The passage graves are placed in situations with limited visibility. Often, there are situations with greater visibility within a short distance. The graves display a limited mutual visibility, in spite of the short distances to their nearest neighbours. Their visibility is independent of their size. Graves and dwelling sites occupy different positions in the landscape. The dwelling sites cannot be seen from the graves, and vice versa.

One interpretation of this is that the graves were located with the aim of separating the dead and the ancestors from the living and the everyday, domestic activities. The limited visibility of the Falbygden passage graves is not unique but recurs over the whole southern-Scandinavian region, a fact which reflects common, fundamental features in the symbolic world of the Funnel-beaker society.

The entrance areas

The material derived from the entrance areas consists of pottery, flint and bone. The spatial pattern has proved to be very uniform. Pottery, burnt animal bones and burnt flint form a concentration c. 3-4 metres wide directly in front of the actual passage entrance and a few metres from it. Alongside the passage and the facing slabs, only insignificant quantities of these find categories are encountered. On the other hand, collections of unburnt flint chips and chip fragments are often found here. Next to the entrance are also found unburnt human bones, which derive from burials in the passage grave. When burnt human bones occur, they can in most cases be interpreted as deriving from secondary graves dating from the Bronze Age or the Iron Age.

In the cases in which the entrance parts are fairly undamaged, the Neolithic find layer is covered by an entrance cairn. These cairns came into existence long after the passage graves were built. The entrance parts lay open during the whole of the Middle Neolithic, which largely explains the great fragmentation of the pottery.

The quantity of pottery varies a great deal. This may be partly explained by the fact that the preservation conditions were different as between the graves, but there may also have been differences in the quantities of pottery originally deposited. In the cases in which the entrance part is well preserved, at least about 60 vessels were deposited (Fig. 192). These figures are of the same order of magnitude as the number of persons buried during the Funnel beaker period at Rössberga. A possible interpretation may be that one or two vessels were deposited at a new burial in the chamber. The quantity of pottery in the Västergötland

passage graves is approximately the same as that in the Danish graves, but it is small in comparison with that in some megalithic tombs in Skåne.

The pottery consists of small, thin-walled vessels (Figs. 190 and 191). The forms are chiefly those of small funnel beakers and brim beakers. No pedestalled bowls or clay spoons have been positively identified. A small number of sherds must have come from vessels of double conical shape.

The decorations are very varied. A large number of *the vessels* are decorated from the inside and outside of the mouth down to the belly. For deposition at the passage graves, vessels of specific types were chosen, in all likelihood those with a special symbolic significance.

A comparison with the southern-Scandinavian chronology indicates that the pottery was deposited during the period MN A I-IV. We seem to have a pattern of deposition which involved pottery being deposited now and then over a long period, but only a few vessels on each occasion. There is nothing to show that the distribution of the pottery over time did not correspond to the distribution of persons buried in the chamber.

The burnt bones are those of cattle, sheep, pigs and dogs, i.e. the domesticated species during the Neolithic (Fig. 194). Two of these bones have been dated to the Middle Neolithic and they also have a spatial distribution which is almost identical with those of the funnel-beaker pottery and the burnt flint. The burnt flint consists mainly of small fragments, inter alia, chip fragments and fragments of polished axes. Both thin- and thick-butted forms are represented. The distribution of the burnt flints largely coincides with those of the pottery and the burnt bones. The unburnt flint consists to a large extent of chips and chip fragments, which are often found in collections near the facing slabs.

The joining together of flint objects shows that the material is incomplete and was deliberately broken up. It is probable that both the animal bones and the flint objects were burnt or broken into pieces at some other place. The deposition at the passage grave was then a part of the ceremonial activities. It is quite possible that the pottery also was deliberately destroyed.

The pottery from Falbygden compared with that from other regions

The pottery from the passage graves in Falbygden has been compared with that from the megalithic tombs in Skåne, Halland and Bohuslän. As regards diversity in the decoration (Fig. 196), the Skåne tombs have clearly the largest variation, while the Bohuslän localities are dominated by a few types of decoration. The Falbygden and Halland localities occupy an intermediate position.

There are clear differences between the regions as regards types of patterns (Figs. 197-8). The two Skåne localities differ clearly from the Falbygden localities, which are relatively closely assembled in one part of the diagram. The localities on the west coast, however, are more divided. The analysis of the decorative techniques yields in principle the same result (Fig. 199). It supports the idea that there are regionally determined features in the Middle Neolithic, funnel-beaker pottery. However, different systems of similarities and differences appear, depending on which level is studied. On a lower spatial level, the conditions are more complicated and even graves which lie very close together may differ markedly.

The construction of the passage graves

The mounds consist throughout to a large extent of stone. They have been proved to be built up of a material which is strongly reminiscent of that which can be fetched from the local moraine. It was probably fetched from some pit in the immediate vicinity of the passage graves.

The mounds have proved to be much more complexly, variously and deliberately built than was previously known. A number of construction details have emerged: facing slabs, inner and outer kerbs, central mounds

and central stone-settings, central hollows, terraces, surfacings and floorings in front of the entrance and around the mound.

This complex construction indicates that their external appearance was important to contemporary society. These features reinforce the picture of the symbolic and demonstrative character of the passage graves. However, it is difficult to express an opinion as to how these details are distributed in the region and whether there are any differences between different areas in Falbygden. How many of the construction details derive from the Middle Neolithic and what came into existence during later periods is also an unsolved problem.

The original mounds normally did not cover the whole chamber, but the roof blocks and presumably the upper parts of the chamber slabs stuck up above the surface. This gives rise to a problem, viz. how the spaces between the different roof blocks, as well as those between the roof blocks and the side slabs, were sealed. At Hjelmar's Cairn, however, some new observations were made, inter alia, as regarded the well-laid, dry walling of slate and limestone between the wall slabs in the chamber. Such sealings are poorly documented in the earlier investigations but can now be considered to be much more common than was previously supposed.