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Declaration

I hereby declare that I worked on this thesis independently and that I used only the sources mentioned in the bibliography section.

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1 Introduction

On the east coast of Ireland, the geological processes created a loop in the river Boyne's channel – the Bend of the Boyne. The course of another nearby river Mattock encloses the area in almost an 'island'. It is no surprise the place attracted settlers for thousands of years. No doubt prehistoric people had a name for the place. However, from the medieval texts we know it as Brug na Bóinde – Mansion or Palace of the Boyne. Nowadays the area around the river bend is commonly known as Brú na Bóinne, which refers to the monuments left by the Neolithic people.

Newgrange is one of three large Neolithic passage tombs in the area of Brú na Bóinne, the other two are Knowth and Dowth. Ever since its discovery, the Newgrange mound attracted people and even more after its restoration in 1960s and 1970s. There are about 250,000 visitors every year, The interest in the tombs is enormous and even if you come early in the morning, there is no guarantee you will get to the tomb, as the visits are limited due to the small space inside the tombs.

The area has been listed as the World Heritage Site in 1993. Nowadays, there is a Visitor Center taking care of all the tourists coming to see the mounds.

This thesis deals with the building, rediscovery, excavations, and restoration of Newgrange. The work also tries to explain for which purpose was the passage tomb built.

The main aim of the thesis is to profile a megalithic monument older, but still less known than the Pyramids in Giza or Stonehenge. The work tries to explain the importance of the structure to its builders and clarify how difficult it must have been for the people of Neolith to build such monument without any aids of modern technique.

There is a unique structure for Neolithic monuments in Newgrange. It was discovered in 1960s during the extensive excavations led by Professor O’Kelly and it’s called the ‘roof-box’. The sun penetrates through this small window, located just above the entrance, annually on the shortest day of the year during the sunrise. The thesis tries to explain the purpose and why the roof-box was built.

There is a brief history of Ireland incorporated in the thesis, because it is important to understand historical background of the country. It is almost essential with the connection to the chapters ‘Newgrange through the Time’ and ‘Discovery of Newgrange’ as many important historical events took place in proximity of Newgrange.

As there are more types of megalithic monuments in Ireland, the author considered important to write a chapter about all of them to make the reader familiar with all of them.

There is also a chapter about the art of Newgrange and its place in early Irish literature. A special chapter describing Knowth and Dowth, the other two large passage tombs in Brú na Bóinne was added as it is interesting to compare them to Newgrange.

As the sources describing Newgrange in detail are very limited, the author focused on a vast monograph by Michael J. O’Kelly and Claire O’Kelly, which describes their work on the monument, and a book by Liam Mac Uistin, which is describing the monument in detail. Majority of the books used as resources needed to be ordered from the United Kingdom or the USA. Some of them were bought during the authors visit in Ireland. The author visited Newgrange in 2013.

2 Brief History of Ireland

It is important to know the history of Ireland to realize on which historical backgrounds Newgrange was built, rediscovered, and reconstructed. Some major

2.1 From the first settlers to the Celts

Unlike continental Europe, the settlement of Ireland is relatively young. First evidence of human activities is from between 8,000 to 7,000 BC¹. The settlers were hunters and gatherers. Later, around 4 to 3,000 BC new occupants arrived. They came from Western Europe. Those new settlers brought agriculture with them. Around this time first stone tombs were built, among them Newgrange in County Meath. There are remains of over 1,000 megalithic tombs in Ireland. “These tombs, which offer clues as to the lives and culture of the Stone Age people of Ireland, are divided into four types: court tombs, passage tombs, portal tombs and wedge tombs. Each type roughly corresponds to a specific time or geography.” (McCullough 7) Each type will be described later.

Between the years 600 and 150 BC Celts came to Ireland and settled there. The habits, religion, and traditions of the former inhabitants were forgotten. The Celtic settlers gained control over the island for the next one thousand years. There are still places in Ireland, mainly in the western part, where people still speak Irish² and where some of the Celtic customs still survive. (Moody and Martin 26)

Around the year 120 comes to existence Ptolemy’s map of the known world, in which Ireland with some of its rivers, towns and tribes appears for the first time.

¹ Some publications state the year around 6,000 BC. (for instance Moody and Martin 17)

² Irish language originates in the language of Celts. By saying ‘people still speak Irish’ is meant as their first language (for example Aran Islands are exclusively Irish speaking). Irish is taught at primary schools as a second language all over Ireland.

2.2 Beginning of Christianity

The Christianity comes to Ireland in the 5th century with the first bishop Palladius. In 432 arrives St Patrick and stays until his death on March 17th 493 (according to the tradition). Patrick spent his life travelling around Ireland and building churches. There is a story of St Patrick explaining the Holy Trinity on shamrock leaves. Shamrock grows everywhere in Ireland and when people couldn't understand the principle of the Holy Trinity Patrick just took the plantlet and explained the 'three in one'. This way he gave Ireland its national symbol. One of the first visits of St. Patrick in Ireland was the Hill of Tara, another ancient sight near the Boyne River.

2.3 The Vikings

Vikings were people of the Norse culture, in our case mainly occupants of today's Norway and Denmark. At the end of 8th century Vikings started raiding Ireland. Vikings often attacked monasteries because of their gold and people, whom they sold as slaves. Because of these attacks there were built so called Round Towers by the monasteries. This piece of architecture is very unique and can be found only in Ireland and less commonly Great Britain. The towers were primarily designed as markers of monasteries, but their secondary purpose was a practical place of refuge from the Vikings. (Ross 84) There are still over 100 hundred of the towers in Ireland, thirteen of them are still in a complete state and two of them are open for public.

The Vikings were also traders and after they founded their own cities in Ireland, the goods from other countries started flow through them. The Vikings founded towns of Dublin, Limerick, or Cork – some of the major cities of today's Ireland. Even though Vikings were great warriors, they started losing battles in the 10th century. The

final battle of the Viking era took place in 1014. The battle of Clontarf was the last massive conflict. A few more raids eventuated after the battle, but they didn't influence the inhabitants and history as much. (Moody and Martin 74)

2.4 Anglo-Norman Ireland

Before Anglo-Normans invaded Ireland, there were small kingdoms all over the island. "The first Anglo Norman intervention in Ireland came in 1167." (The Road) Four years later King Henry II of England landed at Crook with a large army and founded his headquarters in Dublin. Soon he gained control of most of Ireland. Dublin became the center of English power. However, when Henry left the island, it looked almost the same as before his invasion. Henry made his youngest son John the Lord of all of Ireland. John was the first to bear both the title 'Lord of Ireland' and 'King of England'. "Although most of Ireland was still under the control of local leaders, the over-lordship of Ireland had been lost to the Irish." (McCullough, 49) The next king who set foot in Ireland was Richard II. His attempts to gain control were stillborn. (The Road) He was murdered on his way back to England in 1399.

2.5 The Tudors

When in England was at the War of the Roses, Irish leaders saw a chance to extend their independence. The War of the Roses was a series of wars between the Royal House of Lancaster and House of York. They fought for the throne of England as they both were descendants to the throne. The Kildares formed strong relations with the Yorks. At the end of the war, the Lancastrian Henry Tudor won and married Elizabeth of York to unite the houses. He became the King Henry VII. However, Henry was too weak even in England to possess control over Ireland. (The Road) His son Henry VIII had a stronger position at home. His break with Rome put him on a

knife-edge with much of Catholic Europe. "Ireland now took on strategic importance as a potential launch pad for a French or Spanish invasion of England." (ibidem) Henry knew he had to subdue Ireland as soon as possible. The Kildares unintentionally helped him to do that. In 1534 there was a rebellion against the English throne led by 'Silken Thomas, Lord Offaly, the Kildare heir. During the rebellion his men murdered the Archbishop of Dublin, which brought excommunication upon Thomas. Later he was taken prisoner by the English and executed in London. "Silken Thomas's rebellion came too late for Ireland. Had his grandfather, the Great Earl, led an uprising against the King it may well have been successful. Instead, the power of the Kildares had been broken, and Ireland now belonged to the King of England." (McCullough 65)

King Henry VIII tried to extend his power by establishing the Church of Ireland. Instead, he created further religious division. The 'plantation' policy was introduced and English settlers were given land which was previously confiscated from rebellious Irish families. In 1541³, Henry became the King of Ireland when the Irish parliament changed his title. Even though Henry viewed all his actions in Ireland as a huge success, in the long term they created a more unstable, anti-English population. (McCullough 69) The majority of Irish were still Catholics, which affected further history of the island.

The English were constantly afraid the French or Spanish would burst into Ireland and use the island as a landing stage to invade England; therefore they tried to subject the country. In 1592 Elizabeth I founded Trinity College in Dublin.⁴ And process, which started during the reign of Henry VIII, called 'plantation' continued. In

³ By this act Ireland entered a personal union with England. It lasted until the year 1800.

⁴ Trinity College was the first university in Ireland and for several centuries exclusively Protestant. It was also solely for men.

this process, the Scottish and English people were given Irish land. It began in Laois and Offaly, but it would spread to Munster, Ulster and elsewhere. Irish were rebelling against the throne in smaller rebellions almost constantly. They were all defeated. However, in the late 16th century under the lead of Hugh O'Neill, Earl of Tyrone, the Irish nobility of Ulster revolted against reducing their rights. They received help from Spanish, but were defeated at Kinsale in Cork. For two more years they resisted, but then O'Neill finally submitted. (Ross 283) Later, in 1607, the Earls of Tyrone and Tyrconnell along with their families fled for Spain. This act is called The Flight of the Earls and the reason of their exile is unclear till these days. Their departure made one thing easy for English. They confiscated their lands and gave them to the Protestant colonist from England and Scotland in hope to balance their power against the Catholic Irish.

2.6 The Roots of Nationalism

In 1641 yet another uprising broke out in Ulster, the reason was once again the plantation. After the Flight of the Earls, Ireland was basically leaderless and they couldn't oppose the plantation. Thus, dispossessed Catholics rose in the rebellion. It spread through the whole island. The rebels formed the Confederate Catholics of Ireland and for almost ten years they functioned as the de facto government for most of the island. (McCullough 89) It was easy for them at the time, because in England there was a civil war being fought. However, as soon as the war in England ended by execution of Charles I and establishing the Commonwealth, Oliver Cromwell, the Lord Protector of the Commonwealth, landed in Ireland and fiercely suppressed the Confederation. This war was the bloodiest conflict in the whole history of the island. "Nearly one-third of the Catholic population had died in the fighting or the associated plague and famine." (McCullough 95) The majority of the land owned by Catholics

was confiscated and given to the Protestants. However, during the Restoration period there were restitutions taking place in Ireland. Nevertheless, it applied only to small portions of the land.

The Restoration period began when Oliver Cromwell died. It is called 'Restoration', because at the time the monarchy in England was being restored under the rule of Charles II. He was the first king to rule after the interlude. When Charles II died, his brother James succeeded to the throne. James was a devoted Catholic and Irish were thrilled. James wanted to make Ireland his safe haven. "James appointed Richard Talbot as his deputy in Ireland, and Talbot set about making Ireland a safe Catholic stronghold for the King." (McCullough 98) Unlike the Irish, English were Protestant and not thrilled at all. They started plotting against James to replace him with his son-in-law, the Protestant William of Orange. These efforts showed successful and James II was forced to leave for France. The French king Louis XIV supported James and gave him a small army to go to Ireland. Except for a few places in the north of the island, the Irish were supporting James. English would say that it was actually the Pretender James who was plotting against the English throne. In June of 1691 William⁵ arrived in northern Ireland. He brought the largest invading army in Irish history. (McCullough 100) In the mean time, James made his stand along the River Boyne, where eventually the Battle of the Boyne took place. William won the battle and even though the war continued for another year, it was clear William was the King. The war ended with the Treaty of Limerick. The treaty was tolerant to the defeated Catholics. However, in 1695 the Irish Parliament started passing new laws, which were discriminating against the Catholics. Those laws were in force through most of the eighteenth century. (Ross 164)

⁵ Now William III of England

During the 18th century, in response to the revolutions in the American colonies and France, Irish desired independence. (The Road) In 1782 the Irish Parliament was acknowledged as independent, and Ireland and Great Britain only had a common monarch. Nevertheless, it wasn't enough. The Irish Rebellion of 1789 known as United Irishmen Rebellion was influenced precisely by the revolutions above. The United Irishmen were a republican group, which wanted to set up a French-style democratic republic in Ireland. After their formation, they quickly gained support. However, British obviously didn't like the idea and made the movement illegal. "The United Irishmen became an underground movement." (Ross 198) In March of 1798 the leaders of the United Irishmen were arrested. The rest of them realized that if there is to be an uprising, it would have to be now. A large rebellion began in the spring 1798. There were several battles fought, but the Irishmen were defeated in the end at the Battle of Vinegar Hill. Although the United Irishmen were defeated, it became clear the Republicanism in Ireland couldn't be ignored. Two years later was the Irish Parliament forced to dissolve itself and Ireland became part of Great Britain.⁶

2.7 The Great Famine

Between the years 1845 and 1851 the potato blight⁷ ruined potatoes and caused the Great Famine. People in Ireland were dependent on the potato harvest, as it was their main source of food and when the crop was ruined, they started starving. Almost a million people died and over one million more emigrated; mostly to America. (The Road)

⁶ The United Kingdom of Great Britain and Ireland came to exist.

⁷ Potato Blight first widely appeared in 1842 when it destroyed the crops on the east coast of the USA and Canada. It came to Europe three years later. The blight is identified as *phytophthora infestans*, an airborne fungus. When the potatoes are infested, they turn to smelly sludge. (McCullough 146)

2.8 Irish Independence

The Irish fought for their independence and these efforts escalated in the Irish War of Independence. The war started in 1919 and ended with The Anglo-Irish Treaty in 1921. Ireland was granted the status of dominion. The treaty excluded six Ulster counties and Northern Ireland remained separate from the rest of the island. (Ross 333)

In 1949 the Republic of Ireland Act was passed and it created the Republic of Ireland as a country outside Commonwealth.

3 Neolithic People in Ireland

Newgrange builders are still a big unknown even though the site and its surroundings have been vastly excavated in the past. Newgrange was built around 3,200 in the time of New Stone Age or Neolith.

Neolithic people who came to Ireland in the 4th millennium BC had to bring domesticated cattle and sheep or goats with them, because these animals are not native to Ireland. They also brought cereals – wheat and barley. Neolithic settlers had to clear the forests or find places where they could grow their seeds. (O’Kelly, 33) We know about the forests clearances thanks to the pollen analysis. This method is used in a type of environmental archeology and it examines the range of plant pollens in archeological layers. (Pollen Analysis) O’Kelly states that so called ‘elm decline’⁸ “dates in radiocarbon years to c. 5200 BP.”(O’Kelly 33) Other sources such as Moody and Martin or Ross assert the year 4000 BC. However, Ross says that there was a long

⁸ Elm decline is a term used in connection to the pollen of elm, which started to decline around 5200 BC. The archeologists examined the phenomena with the use of radiocarbon dating. While the pollen of elm (and other tree species) was declining, it seemed that the weed-type pollen started rising. (O’Kelly 33)

overlapping and that the process was gradual and even O'Kelly admits that clearing came a few centuries later and the first elm decline credits to various diseases of the trees. (O'Kelly 36, Ross 66) Naturally, by developing agriculture, the food became more copious and the population in Ireland started to grow.

Why did the settlers choose the Boyne Valley? It wasn't the only place in Ireland settled by people, but its location was felicitous. "Like most of Ireland at that time, the valley and surrounding area would have had extensive woodlands of oak, birch and other trees." (Uistin 14) Those people might have lived in the Stone Age, but wood was very important in their everyday lives. They used it while building their houses, making their tools, farming and so on. The proximity of the river Boyne was also very significant. People used it as a source of water and food. In the nearness of any river, there is fertile land, too. It made agriculture even easier for the settlers. All those factors would allow the growth of the population. Uistin also points out that the advance in agriculture led to the permanent settlements. In the Middle and Early Stone Age people had to move according to the seasons. In the Neolithic period, thanks to the new methods in agriculture, people could till the land all year long. (ibidem 20) That led also to the building of their megalithic monuments. Since they could settle down at one place, they could plan on building such challenging structures.

Even though the agriculture developed throughout the years, it doesn't mean it was easy for the people. They didn't have any of the modern tools to do so and the methods were very simple and basic. Farmers used only simple wooden plows pulled by oxen. Stock wasn't probably kept not only for their meat and use in cultivation of the land, but also for milk and hide. (Uistin 22)

It seems logical that the community which built the passage tombs in the Boyne Valley was substantial. O’Kelly claims that the society was diverse – “some were more wealthy and more powerful than the others and were able either to secure or to exact the labour necessary to build the monuments.” (O’Kelly 124) The society had to be developed to a certain point in order to even design such structures as the tombs are.

People in Neolithic era also started making pottery. “There is no evidence from Ireland that Mesolithic people made or used it.” (O’Kelly 45) Clayware was found in the Boyne Valley, too. It might be a significant factor in assessing whether descendants of Mesolithic farmers or new arrivals built the tombs. Pottery is useful for chronological purposes. It can be slightly different in every area, but in the end there are common features that would indicate the time and even culture. Along with the older styles, a new style of pottery was found in the area of the Boyne Valley. Along with this a change from rectangular to circular habitations was made. (Smyth 68) This may actually mean that around this time the builders came to Ireland and brought new styles of building, ceramic making, and maybe even a new religion with them. Regardless, excavations in Boyne Valley proved human activity long before the tombs were built. (O’Kelly 50) That would mean either the builders replaced the older settlers or they taught them their ways and those two societies blended into each other. Most of the scientists support the theory of a gradual spread of ideas and techniques. (Ross 67) This means the newcomers taught the natives their techniques and not invaded the country and replaced the previous population. Moreover, people of the New Stone Age already traded and travelled to Great Britain and perhaps even further. (ibidem 66) It is possible they learned some new techniques on their travels and there

were actually no newcomers to the area. We simply don't know and all of the above scenarios are possible.

As mentioned above we still know very little about the people's everyday lives despite the extensive excavations in the Boyne Valley area. In the Visitor Center of Brú na Bóinne there is a reconstruction of a typical habitation displayed. (See pictures 1 and 2 in Appendixes) The dwelling is a round thatched house, where a fire was kept in the middle. The fire was used for cooking and most likely as a source of warmth, which means it was probably kept burning all day and night. The beds were situated on the sides and likely made of straw and covered with animal skins. The houses were arranged in clusters for protection. Moreover, the habitats for animals were probably built close to the houses so that they could protect the animals from predators. (Uistin 21)

4 Megalithic⁹ Tombs

The reasons for building megalithic tombs are still a matter of speculations. Many of the tombs were destroyed in the past, even though there are still about 1,200 such structures still to be found in Ireland. The megalithic buildings can be divided into four main types: court, portal, passage, and wedge tombs. (Ross 68)

4.1 Court Tombs¹⁰

The number of this type of tombs in Ireland is estimated for over 300. De Valera in 'The Court Cairns of Ireland' claims that similar tombs can be found for example in Scotland or the Isle of Man. (qtd. in O'Kelly 85) Those tombs are more frequent in the north of the island. There aren't any exact matches for the court tombs at the

⁹ Megalithic comes from Greek megas and lithos – big/large and stone. The word therefore means 'large stones' or 'made of large stones'.

¹⁰ Court tombs can be called court cairns, too.

Continent. (ibidem 92) The court tombs are named after their prime characteristic. There is always a court-like area from which there is access to the tomb chamber. In average, they are 30 meters long and 15 meters wide at front and 7 meters at the rear. The courts can be oval or circular, or they can be U-shaped and semi-circular. The latter are the most common. (ibidem 87) The eastern orientation is the most frequent.

O’Kelly states that the nature of the burial rite is unsatisfactory in these types of tombs. (O’Kelly 88) The reason is that only less than forty of such tombs have been excavated and some of them only partially. “In the majority of the excavated sites, one cremation was found in the tomb and in a number of cases, this was a young male.” (O’Kelly 88) Nevertheless, in some of the places there were more remains found – in Audleystown there were over thirty people entombed. This suggests court tombs might have been designated for rituals rather than burials, or even built as burial chambers for specific people.

4.2 Portal Tombs¹¹

There are over 160 portal tombs in Ireland. This type of tombs is mostly located in the east and north. (Ross 68) However, almost every county on the island includes some of these monuments. The exceptions are Kerry, Kildare, Laois, Limerick, Offaly, and Westmeath. Similar tombs are located in Wales and Cornwall, too. (O’Kelly 97) F. M. Lynch says:

The presence of strikingly similar portal dolmens in both countries, Ireland and Wales, reveals that contact must have been close, whether it was a case of derivation one from the other, or of two parallel streams emanating from some common source as yet unidentified. The existence of portal dolmens in Cornwall should not be forgotten. (qtd. in O’Kelly 97)

¹¹ Portal tombs used to be called portal dolmens, too.

The tombs have a straight-sided chamber, which is often narrowing towards the rear. There are usually two tall portal stones by the entrance. (O’Kelly 92) The chamber itself is ordinarily capped by a single megalith, thus the other name of these tombs – portal dolmens. These tombs are usually orientated to the east, but there are some exceptions to this rule. “The evidence from the twenty or so portal tombs which have been excavated suggests that the burial rite was cremation.” (ibidem 96)

4.3 Passage Tombs¹²

In Ireland there are around 300 passage tombs. The number is relative, though. Until further excavations have been done, we cannot get an exact figure. (O’Kelly 97) Nevertheless, it is clear this type of tombs is located mainly in a wide strip between county Meath and county Sligo. They can also be found in other European countries, but the Irish are the largest. (Uistin 35) Newgrange and other tombs in the Brú na Bóinne area are examples of passage tombs. “Passage tombs differ from the other classes of megalith in that they are built on hilltops or on whatever was the highest point of land available.” (ibidem 97) The passage tombs were distinctly grouped into cemeteries, thus their other name – passage graves.

Passage tombs are called according to their appearance. They are mounds of stones and dirt with a narrow passage leading to the chamber. (Ross 68) They are built of orthostats¹³. The passages are roofed by lintels and corbels, the chambers are ordinarily corbelled, but the smaller ones sometimes have capstones directly on the upright stones. (O’Kelly 104) Unlike in the other types of the tombs, there were no objects of everyday use found in the passage tombs. The stones of many of these tombs are decorated by engravings.

¹² They are also called Passage Graves.

¹³ According to the WordSense.eu Dictionary orthostat means an upright stone or slab.

Passage tombs seem to be the least fixed on the orientation of the entrances. It appears, however, that there is a preference of the south-eastern quadrant. (O’Kelly 106) The entrance of Newgrange faces south-east, however, Knowth faces east and west, too, and Dowth’s both entrances are in the south-western quadrant.

4.4 Wedge Tombs¹⁴

These tombs are found mainly in the west and south of the island. Their name comes from the shape of the tomb gallery. (Ross 68) This type of tombs is the most widespread; there are about 400 known wedge tombs in Ireland.

They are usually wedge-shaped – they are wider and higher at one end. This part usually contains the entrance and faces south-west. (O’Kelly 115) The tomb gallery is built of orthostats.

“So far, no certain example of a wedge tomb has been found in Britain.” (O’Kelly 122) Given the locations of the wedge tombs, this might mean that people from the western part of Ireland didn’t maintain contact with people in Britain. O’Kelly even claims that the wedge tombs are native to Ireland. (O’Kelly 122)

5 Why Was Newgrange Built?

The reasons for building passage tombs in the Boyne Valley can be only a matter of speculations, but we can deduce some information from the found materials and human and faunal remains. “The time-span involved in the building of the three is not known; we can guess at a few centuries and, still guessing, but with somewhat more assurance, say that Newgrange was the earliest, followed by Knowth and Dowth.” (O’Kelly and O’Kelly 122)

¹⁴ These used to be called wedge-shaped gallery graves.

It is commonly accepted that the tombs of the Boyne Valley were intended as burial places. Nonetheless, the archeologists see the tombs also as part of the life in the Neolithic period. They could have served several purposes – as burial places, of course, but also as territorial markers or focal points for the wider community. (Uistin 24) As mentioned above, monuments like Newgrange were built by developed communities with clear hierarchy. Such monuments would serve as proves of wealth and power. “Regardless of its many possible functions, there was certainly a strong religious or spiritual motive behind the building of the monument.” (ibidem 24)

6 Finds in the Newgrange Tomb

There were cremated and unburnt human remains found inside the chamber of Newgrange; the number of remains is small, however, with certainty we can tell that there were at least four sets of remains included. (O’Kelly 105) When the tomb was first discovered in 1699, there were no restrictions as to who and when can go inside. People could have taken souvenirs from the tomb and therefore we cannot say how many people were originally interred in the tomb itself. It was also probably the reason of the state of all the finds in the tomb. Both human and faunal remains were scattered around the whole chamber in small pieces.

The faunal remains consisted of mammals (which were the most plentiful), birds, mollusks and one specimen of frog. (O’Kelly and O’Kelly 107)

The number of other finds is surprising, though. O’Kellys state that there were 7 ‘marbles’, 4 pendants, 2 beads, a utilized flint flake, a bone chisel and fragments of several bone pins and points found in the chamber or at the very end of the passage (near the entrance to the chamber). Nonetheless, there were no discoveries of pottery in the tomb. (O’Kelly and O’Kelly 105)

Even though we don't know the exact number of buried people in Newgrange, it is clear it wasn't a cemetery as such. There were too few remains found in the tomb. It can prove that it was meant only for people of a special status within the community. The remains found can easily belong to wisemen, healers, or priests. There had been speculations that the tomb was intended as a burial site for nobility like it was for example in Ancient Egypt with the pyramids. It couldn't be verified. The building of the tomb took probably several generations and there is no evidence of exclusive royal usage. (Uistin 25) As written above, we don't know far enough about the Irish Neolithic people to give such conclusions. The historians know nothing about their social system, language, or religion. (ibidem 25)

The fact that the tomb was open for public for 260 years sparked another speculation among some historians. They believed that originally there must have been remains of hundreds of people in the tomb and that they were stolen from the tomb. (Uistin 26) This hypothesis cannot be proven, but seems highly unlikely. There would have to be bones of more individuals shattered around the chamber.

7 Construction of the Monument

When trying to imagine how Newgrange looked like when it was built, we have to consider its satellite tombs. There were at least three other mounds in the proximity of the main monument. Nowadays, they are called site K, L and Z, and they were all at least 20 meters wide. There probably stood a site Z₁, too. (O'Kelly and O'Kelly 115) There wouldn't be any trees and the site would be visible from a great distance. It looks impressive even nowadays; we can only speculate how it affected people in the fourth millennium BC.

6.1 Building materials

Only in the curb, there were 97 slabs used. They all weigh more than a ton. The chamber and passage were built of orthostats. “There is possible to count a further 450 slabs in the tomb structure itself – these are the orthostats of the passage and chamber and the roof-corbels.” (O’Kelly and O’Kelly 116) Most of those stones are carboniferous sandstones known as greywacke. The roof of the mound is made of smaller stones, which were probably collected from the river terraces not far from the monument’s location. (Ustin 32) The front was covered with white quartz and small granite stones; as it is nowadays after the reconstruction of the tomb.

O’Kelly asserts that almost all of the megaliths used in building the monument show geologically weathered surfaces. (O’Kelly and O’Kelly 116) It means that those stones were not quarried, but were found lying in open areas where they were left after the Ice Age ended. It also means they must have been found in a large area and brought back to the site. “Imagine the difficulty of finding so many suitable slabs, half-hidden as they must have been by scrub and forest, and of bringing them onto the site.” (ibidem 117) Moreover, most of the way must have been uphill, because the site is located on the top of a ridge. O’Kelly calculated there are about 200,000 tons of stone covering the cairn. (Ustin 35) We don’t know whether the people carried all the stones themselves or whether they used help of their cattle. This task must have been very difficult and exhausting either way. When speaking about the megaliths, it is possible they used similar techniques that were used in Egypt while building the pyramids. Trunks were used as roadways on which were the stones rolled.

Frank Mitchell in his ‘Reading the Irish Landscape’ calculated how long it could take to bring all the materials and construct the mound. He counted the population of the Newgrange area to approximately 1,200 people. He assumed there would be 2

working men in every family, which means about 400 people. Mitchell estimated that during the two months break in farming those men would work on the site – they would carry the building materials, clear the site, decorate the stones and transport the large slabs. Even without the wheeled transport, he calculated the time of building into only five years. (qtd. in Uistin 30) O’Kelly disagrees with such estimations. Mitchell counted only with 50,000 tons of stones. It means only carrying the materials would take at least four times more. (O’Kelly 117) As said above, we don’t know how these people lived, and what was their daily routine. Mitchell’s estimations don’t count with the time for resting and habits of the builders; it also doesn’t mean all the work on the fields was stopped during those two months. These numbers are therefore only speculations, it is probable that the construction took a lot longer. However, Mitchell also claims that there must have been an overall authority to direct the work. (qtd. in Uistin 31) It seems logical that there was somebody leading the construction. With such a massive building, it is highly likely – the construction required years of planning and designing.

The quartz and granite stones that cover the front of the tomb might be the most valued construction materials. These stones make the distinctive façade of the tomb. They were reconstructed in the 1970s by O’Kellys. O’Kelly states that the granite stones were added randomly into the frontage, but there is a possibility they originally made a pattern. (O’Kelly and O’Kelly 110) The white quartz stones are to be found in County Wicklow which is about 80 kilometers to the south. The granite stones are from Dundalk Bay’s north shore, which is about 50 kilometers to the north. (Uistin 35) It is evident the people wanted their tomb to stand out and went far to find the right building materials. We have to bear in mind they wouldn’t have any carts or other means of transportation available at the time. It seems they chose the white stones to

make their tomb visible from far. They succeeded, Newgrange can be seen from distance; its white front shines in the green of its surroundings.

8 Structure of the Tomb

As written above, all the tombs in the Boyne Valley are the passage tomb type. Those tombs have a passage made of orthostats leading to the central roofed chamber. These tombs can be found in other places of Europe – for example in Brittany, some of them are even older than Newgrange. It is clear the passage tombs don't originate in Ireland. "However, it is in the Boyne Valley that the skills of Stone Age architects and artists reached the peak of their expression." (Uistin 37)

Newgrange is located in County Meath. It lies approximately 1 kilometer north of the River Boyne in 61 meters above sea level. The closest villages are Slane, which lies about 8 km to the west from Newgrange, and Drogheda, which is located about 14 km to the east. The site is about 50 km far from Dublin to the north.

Newgrange stays on a ridge and therefore can be seen from distance. It has been reconstructed to resemble its original form. In Irish, Newgrange is called *Sí an Bhrú*, which means the Fairy Mound. "It has a magical appearance, like a fairy fort looming up over the valley." (Uistin 10)

8.1 Exterior

As mentioned above, there is a curb made of slabs surrounding the tomb. They are laid on their longer sides and are beautifully carved with spirals, swirls, diamonds, curves, circles and so on. The best known curbstones are possibly the entrance stone

and so-called K52¹⁵ which is located on the other side of the mound. Above those slabs, there used to be a 3 meters high wall standing on the curb. It was reconstructed in the 1970s to resemble as much as possible the original look. The wall doesn't go around the whole mound, though. From the south-eastern, or the entrance, part it is made of white quartz and granite stones; from the opposite side it is made only of ordinary cairn boulders. Similar types of revetment are known in Brittany, too. However, it was the first to be examined and restored in Ireland. (O'Kelly 101)

Originally, Newgrange was of a flat top and steep sides. As the years went by, the sides fell forward and gave the tomb a rounded shape. (Uistin 37) The tomb is approximately 80 meters in diameter. It's not completely circular, though; it's wider from north-east to south-west. (O'Kelly and O'Kelly 21) Newgrange is about 12 meters high.

The entrance to the passage is situated to the south-east. Before the excavations, it was blocked by a slab, which now stands by the entrance. Another megalith is in front of the entrance – the highly decorated entrance stone. It is about a meter high. Unlike the sealing slab, this stone used to be there even in the Neolith. In the Stone Age, the visitors probably had to climb over the stone to get into the tomb. “It probably represented a psychological barrier to those who held Newgrange sacred. It may have been seen as the threshold of the other world, the point where the world of the dead met the world of the living.” (Uistin 41) Nowadays to enter the tomb, the visitors don't have to climb over the entrance stone. Not only because it would be

¹⁵ The stones of the curb were all given a name according to their position in the curb, hence the number. The entrance stone is called K1 and the stone on its left is K97, the last stone of the curb. On its right side, there is K2 and so on. K stands for kerb. In this thesis, however, it is used the American term curb, because it is written in American English.

uncomfortable, but more importantly, because it would ruin the stone. There are modern wooden stairs leading over the neighboring stones.

At the beginning of the excavations in 1963, there was discovered a so-called roof-box by Michael J. O’Kelly. After the discovery it was found that at the winter solstice dawn the sun shines right through it into the tomb’s chamber. The box is located right above the entrance to the passage. “The roof-box is 90 cm in height, 1 m wide and 1.2 m from front to back.” (O’Kelly and O’Kelly 21) It is a so-far unique structure and it certainly took a lot of planning to the Neolithic people.

A stone circle used to be around the tomb. Nowadays only few orthostats remained in their positions – 12 out of possible 35 to 38. (O’Kelly and O’Kelly 13) Those stones aren’t decorated. Interesting is that the stone circle and the mound aren’t concentric either – at the nearest they are 7 meters from the edge, at the farthest they are 17 meters apart. (ibidem 13) It is clear though, that the stone circle was built long after the Newgrange tomb was abandoned. Some of the megaliths used for it were found lying on the remains of so called Pit circle or Woodhenge, which was built by the Beaker people of the Bronze Age. We don’t know the purpose of the stone circle, but some suggest it might have had an astronomical function. (Uistín 76) Either way it is the youngest structure at the site.

8.2 Interior

The Newgrange tomb consists of a passage and a tomb. The passage runs from south-east to north-west. It is built of large orthostats which grow bigger as we proceed through the tomb. When first entering the tomb, most of the people have to bend as the megaliths are only about 1.5 m high. After getting into the passage, the roof is considerably higher and it rises the deeper in the tomb we are. At the entrance

to the chamber it is 3.6 m. (O’Kelly and O’Kelly 21) The passage is narrow, but widening at the bottom; when going through it is almost necessary to turn to the side. It is almost 19 meters long and at the end there is no daily light. It is also lined with large orthostats. The passage goes naturally with the terrain of the hill on which is Newgrange built – it slightly rises. The difference between the floor level of the entrance and the chamber is almost 2 meters. (ibidem 21)

The chamber is of a cruciform shape. Thus, there are 3 recesses or side-chambers. Comparing to the whole mass of the mound, it is a very small room. It is 5.25 meters wide (from the entrance to the back) and 6.55 meters long (from the back of the west side-chamber to the back of the opposite one). (O’Kelly and O’Kelly 21) It hasn’t needed much of restoration in the past; therefore it stands as it probably did thousands of years ago. Again, its walls are made of large slabs and so is the roof. “Between the large rocks, the builders jammed smaller rocks to fill the gaps.” (Uistin 43) The room itself looks impressive and even today gives the feeling of peace and serenity. To maintain this sensation and to honor the dead, it is forbidden to take photos inside the tomb.

The roof of the chamber is corbelled. It means it is dome-shaped made of large stones. Each stone overlaps a little the one beneath it. Eventually the gap is small enough to be capped with one capstone 6 meters above the floor. The builders of the mound made efforts to keep the interior dry and constructed a system of water-grooves. These and the construction of the roof made the chamber almost perfectly water-tight. (Uistin 44) However, throughout the years, the water-grooves got clogged and water started leaking. Edward Lhwyd, one of the first visitors to Newgrange after its rediscovery, described water dripping into one of the basin stones inside the chamber. (Lhwyd 1700/1 2)

As written above, the chamber has three recesses. The east recess is the largest and most substantially ornamented. (O’Kelly and O’Kelly 21) There are two basin stones lying on each other in this side-chamber. The upper basin is made from granite and is heavily decorated. The lower stone is without carvings and is made of slate. Even though it looks less attractive, it is believed it is the more important one. It is too large to be brought to the tomb after it was built. According to Uistin, some experts think that it was the holiest stone in the building. It might have been there long time before Newgrange was built. (Uistin 46) In the other two recesses, there is only one basin stone in each. The one in the north one was broken in the past. Professor O’Kelly left the pieces lying on their spots even though he knew not all of them came from the basin. “They were found there when we started our excavation and we thought it best not to remove them.” (O’Kelly and O’Kelly 104) It is believed all of the basins held the remains of the dead. In the end or north recess, there is the tri-spiral carving. It is a complicated swirl of three connecting spirals and probably the best known motif of Newgrange.

9 Newgrange through the Time

The tomb itself was built around 3,200 BC during the New Stone Age. It is clear though, that there was human activity in the area long time before that. Professor O’Kelly even discovered that before Newgrange was built, there had been an earthen mound. “The edge of this earlier mound corresponded with the edge of Newgrange at the point where K52 was later placed.” (Uistin 40) It is possible that by decorating the stone so profoundly, the builders were honoring the previous mound’s designers.

We don’t know for sure what actually happened to the society, which built the tomb. The period of the tomb builders lasted for about five or six centuries. (Uistin 73)

The tomb of Newgrange is the oldest of the large three mounds – Newgrange, Knowth, and Dowth.

According to archeological projects, in the third millennium BC the area around Brú na Bóinne was well populated. It is in contrast that there is relatively low visibility of early Bronze Age findings within the area. (Smyth 37-38) Nevertheless, it doesn't mean there was no activity. Newgrange was still held as a sacred place.

What happened to the population of the Stone Age? We don't know. It is possible that around 2,000 BC, when a community known as the Beaker people arrived, the Boyne people were expelled from their land. It is also likely that the Beaker people were peaceful people and after their arrival they taught the Boyne people their ways and their society absorbed the original inhabitants. (Uistín 73)

The expression Beaker refers to the pottery those people made. It is known through the whole Europe, but in Ireland the pottery started to be used in a different way than on the continent. Beaker people would bury their dead into individual graves and leave the pottery with them full of food. Sometimes they would burn the bodies and put the remains into the vessels or into bigger urns. (Moody and Martin 23) The beaker pottery is distinctive by its decoration and thin walls. The ornamentation is characteristic with its geometric patterns that are achieved with short-tooth comb. (Uistín 74)

The Beaker pottery was found in many megalithic structures in Ireland, which suggests the newcomers accepted some of the older settlers' habits and ways. However, there were no such finds in the Newgrange tomb. It seems the tomb already wasn't used when the Beaker people lived in the wider area. The entrance might have

been already covered with its capstone or as Uistin suggests, it might have been blocked by the collapsing mound. (Uistin 75)

Nevertheless, it doesn't mean the mound didn't play any part in the lives of the people. Quite the opposite, it was still a focal point for rituals and celebrations. (The Woodhenge) During this time, the Pit circle or Woodhenge was constructed less than 10 meters far from the mound itself. It was a large wooden enclosure – a double circle of wooden posts, which had 100 meters in diameter. Since it was built of wood, there hasn't been any evidence of it above the ground, but archeologists found not only the postholes, but also pits where small animals had been cremated. There were also burial shafts where the burnt remains were put.

It is possible the site was equally important to the Beaker people as it had been to the Boyne settlers a thousand years earlier. This structure was roughly contemporary with similar Beaker sites in the south of England. (Uistin 76) At Salisbury Plain in Wiltshire there had been a woodhenge before it was replaced by a similar structure made of megaliths – Stonehenge. Just a few centuries after the Pit circle stopped being used, the Stone Circle was lifted. As mentioned above, we don't know what its purpose was; and O'Kelly leaves it to the others to find out. (O'Kelly 75) The Stone Circle or the Great Circle was the last structure built at Newgrange site.

Around the time when Beaker pottery began to be made, metal working got started in Ireland. The island gradually entered the Bronze Age. Even though in the area of Brú na Bóinne hasn't been found much of activity, a few kilometers east of the area, substantial evidence for Bronze Age settlements has been uncovered. (Smyth 39) It is important to say that there has been no interference during the Bronze Age, Iron Age, Early Christian or Anglo-Norman times with the tomb itself. It remained sealed

with its capstone up until its re-discovery in 1699. There had been activity in its proximity, though.

There have been no findings from the early Iron Age at the site of Newgrange itself. But there were several burial sites found in the area.

Carson and O’Kelly stated, that late Iron Age and Roman coins, and ornaments have regularly been found in the nearby area of the mound. It was particularly around the entrance. (qtd. in Smyth 40) A lot of those findings were recovered during the years after the discovery of the tomb. Some were found during O’Kellys’ excavations in the 1960s and 1970s. Similar finds go through time up to the early Christian era. It is possible people would come to Newgrange to wish wishes and leave the coins as an offering. O’Kelly states, that at least some of those things actually were votive deposits. (O’Kelly and O’Kelly 74)

When St. Patrick arrived to Ireland at the mouth of the Boyne, he travelled around the valley and lit the Paschal fire. This act has been associated with the Hill of Slane since the seventeenth century. Nowadays, historians question the placing and put the event within the Brú na Bóinne. (Smyth 44) It seems the medieval society in the area was conscious of the prehistoric monuments nearby. They would write songs and let legends and superstitions to arise about them. We will go through this topic in a separate chapter.

It has been believed that Newgrange was one of the tombs plundered by the Vikings in the ninth century. The evidence is questionable, though. It rests only on two annalistic entries – Annals of Ulster (862) and Annals of the Four Masters (861). O’Kelly claims that the tombs that those two annals talk about are in fact Dowth and Knowth, but Newgrange is not one of them. (O’Kelly and O’Kelly 25) Moreover, at

the time the entrance to the tomb of Newgrange hadn't been known anymore. The mound started collapsing long time before that. As mentioned before, it is likely the mound had been collapsing even before the Beaker people started using the surrounding land. Moreover, the Norse came for the supplies and they wouldn't bother digging in the ground for treasure that even didn't have to be there.

In the mid twelfth century there was founded a Cistercian abbey on the banks of the River Mattock. The abbey was granted a lot of land. Within this land there was also a great portion of Brú na Bóinne. The Cistercians transformed the rural landscape. "The Boyne Valley in particular was dominated by Cistercian farms or granges, the names of some now fossilized in the townlands of Littlegrange, Shepgrange, Newgrange and Roughgrange." (Smyth 46) This is how Newgrange got its today's name. We don't know how it was called by its builders, because no records of their language were found.

The Cistercians were an order which vowed its poverty, so therefore they could only manage their lands by their own manpower. At first, they didn't have any tenants, but later they broke this vow and let their land. By 15th century, there were no brothers at the farms. (Smyth 49) Fortunately, Newgrange wasn't influenced by those changes.

As written in the chapter Brief Irish History, there was a radical change in colonial policy during the 16th century. The monasteries were dissolved and an English-manned military-based administration was established. (Smyth 51) Fortunately, the area of Brú na Bóinne wasn't affected as much. The tenants remained in their positions, except they did no longer pay their tenancy to the abbey, but to the new owner – Edward Moore, an English 'soldier of fortune'. (Smyth 51) The Moores were the only Protestant landowners in the area up until the late seventeenth century.

The 17th century was eventful in the area – there was the Ulster Rising in 1641, which spread into the area, too, the Cromwellian campaign in 1649, or the Battle of Boyne in 1690. In the area of Brú na Bóinne, there were stray coins, cannon balls and other weaponry, probably contemporary with the battle, found. (Smyth 54) None of them were found in close proximity of the mound, though.

At the very end of the 17th century, Newgrange tomb was discovered. The ‘cave’ was discovered because of need for stones. The new landowner Charles Campbell instructed workers to take some at the site and that’s how they found the entrance to the tomb. We will describe this further in the next chapter.

Little has changed during the eighteenth and nineteenth century. The land in the area was still used for farming. Although more and more people were drawn to the sites of Brú na Bóinne. In that time they could freely enter the tomb of Newgrange. It is interesting the Great Famine didn’t affect people living in Brú na Bóinne as severely as other parts of the country. “Sources such as the Census of Ireland and the Perambulation Books record hardship in the area, although this was alleviated in certain places by landlords who reduced or suspended rents.” (Smyth 58)

In 1882 Brú na Bóinne was listed for protection as a National Monument. “It was some time before they were taken into State care and more recently still before they were purchased outright by the State with adjoining land.” (Historical background)

The 20th century was revolutionary everywhere and it counts for Brú na Bóinne, too. Newgrange was excavated and reconstructed to its – as it’s believed – original form. And in 1993 it was added to the World Heritage list. Since 1997 a new visitor center runs a few kilometers far from Newgrange. Nevertheless, the area surrounding

the World Heritage Site is still agricultural. People grow corn and keep cattle and sheep, which can be seen freely grazing when approaching the sites.

10 Discovery of Newgrange

As written in the previous chapter, in 1699 the land around Newgrange belonged to a certain Charles Campbell. He was looking for building materials and knew there were lots of loose stones at the hill of Newgrange. He sent his workers to collect those stones. At the time, nobody knew there was a passage tomb hidden underneath the mound that just looked like a green hill to everybody. The workers started digging and soon uncovered the large entrance stone with carvings all over it. “No doubt Campbell was quickly sent for and was present when his men eventually uncovered the entrance to the tomb.” (Uistín 78)

Fortunately, at the very same time a Welsh antiquary Edward Lhwyd was in Ireland and as he learned about the discovery of the ‘cave’, he came and took notes about it. There are four of his letters still preserved. (O’Kelly and O’Kelly 24) The author was able to find two letters which describe the Newgrange tomb from outside and inside and one letter in which Lhwyd only mentions the tomb. In the latter he promises to show a draft of the tomb to the addressee – Thomas Molyneux. (Lhwyd 05/1700 3) It suggests Lhwyd made a big effort to map the site. In the other letter to Molyneux from January 1700, he describes thoroughly what he saw as he entered the ‘cave,’ as he calls the tomb. He even mentions a few finds that didn’t last till present day. He writes about a significant amount of bones, a piece of elkshorn or an elk’s skull, some beads, or pieces of glass. (Lhwyd 01/1700 2) This gives us an idea what could have been found in the tomb, if there was a proper excavation held right after its discovery. However, he seems very uncertain about those finds in his letters. He says

“they found it” or “were found” (Lhwyd 01/1700 2 and 1699 2). It seems he never saw those finds and only heard about them from the owner or somebody else.

Lhwyd portrays the tomb in both of his letters very similarly and in both he is guessing the origin of the tomb. “A Gold Coyn of the Emperour Valentinian, being found near the top of this Mount, might bespeak it Roman; but that the rude Carving at the Entry and in the Cave seems to denote it a barbarous Monument.” (Lhwyd 1699 2) Even Lhwyd correctly guessed the purpose of the tomb – he assumes it was either a place of sacrifice or burial of ancient Irish. (Lhwyd 1699 2) However, his deduction was made because it seemed to him that the finding of a Roman coin near the top of the mound showed that the monument was older than any invasion of Danes. He excludes Romans, because the carvings are “too rude for polite people.” (Lhwyd 1700/1 2) Nevertheless, he was the only early researcher who gave credit for building Newgrange to the natives. “Most of the other writers attributed Newgrange to the Danes and influences were also invoked from Egypt, India, Ethiopia, Phoenicia, Celtic Gaul, and so on; in fact, almost any race under the sun was considered eligible save for the natives themselves.” (O’Kelly and O’Kelly 35)

Since its discovery, Newgrange was open for visitors. A lot of antiquaries and historians came to see the tomb. Some believed it used to be a pyramid, some believed it used to be much bigger. There was an antiquary Thomas Pownall who visited the mound in 1769. He noticed that not all of the stones were carved and raised a theory that has been repeated until today. He thought that the stones had formerly belonged to another monument of a more ancient date and that they were brought to Newgrange and placed as the shapes of the stones suited the place assigned it. As professor O’Kelly says, the carvings in Newgrange are homogenous. Therefore, there is no evidence that would support Pownall’s theory. (O’Kelly and O’Kelly 34)

In 1844 it even seemed the tomb would be broken up for the repair of the roads. Fortunately, it didn't happen and Newgrange remained standing. It didn't remain untouched, though. Not only antiquaries and historians came to the mound. There were uncontrolled visits every day. People would carve their names and dates into the stones in the passage and chamber. There are hundreds of such carvings next to the ancient ornaments visible to the visitors these days.

There is also a story concerning the broken basin stone from the end recess. In 1795 there was a man from Connaught, one of the provinces in west of Ireland, who had a dream that there was gold buried underneath the basin. He believed the dream and came across the island to get the gold. He rushed into the tomb and broke the stone to start digging underneath it. (Uistin 46) Of course, he didn't find anything.

10.1 Newgrange in State Care

As written above, Newgrange was taken into State care in 1882 under the provisions of the Ancient Monuments Protection Act. First repairs and conservations of the monument were undertaken in 1890. During the works the only finds were some animal bones. (O'Kelly and O'Kelly 39) However, the workers discovered some of the carved stones at the curb. It was the already mentioned K52 and K67 which lies on the northeast.

There were several other conservations taking place at the mound, the biggest one in the 1950s. At the time the tomb even got electricity. After that it was left alone for almost a decade apart from occasional conservation and repairs. The damage to the ornamented stones continued, people even carried away the quartz stones.

Even though a lot had been written about the tomb, very little was known. The tomb was regarded a Bronze Age monument of 1500 BC or older. (O’Kelly and O’Kelly 42)

In 1961 the Irish State purchased the land surrounding the tombs of Brú na Bóinne. One year later, the excavation and restoration began. It was conducted by Professor Michael J. O’Kelly from the University College of Cork.

11 Reconstruction of Newgrange

Before the excavations of 1961, Newgrange was in terrible condition. The mass of the mound had fallen forward and buried the entire curb. The wall of granite and quartz stones was lying underneath it. There were some restoration works being done in 1930s. During this time, trenches 2 meters long were sunk through the stones to reach the base of the curb. “This showed that all the sloping ground between the kerb and the surrounding field was made of material that belonged to the mound.” (Uistin 82) It is clear there was a lot of work ahead of the team around Professor O’Kelly in 1962 when the excavations and restoration began. The works on the mound lasted for 13 years and therefore ended in 1975. When they were finished, Newgrange was standing as it is nowadays and at the time it was built.

Several curbstones had to be put back in their place, some had fallen, others only moved from their initial positions. Concrete had to be used in some cases to make the stone more stable.

From the fallen stones, the archeologists found out that the revetment wall must have been 3 meters high. The original wall was of dry stone, but the renovators wanted to make it longer-lasting and more stable. They built a wall of reinforced mass-

concrete to the required height on a foundation dug behind the curbstones. They didn't want to damage the stones by the concrete, so they wrapped them in plastic, so that they remained untouched. After that they fixed the quartz and granite boulders that were found underneath the fallen cairn mass.

The only modern modification in the revetment wall is the entrance. The archeological findings showed that the wall must have been extended as far as each end of the entrance stone and then turning sharply towards the entrance itself. (O'Kelly and O'Kelly 110) O'Kelly knew that there is need for more space, since the numbers of visitors were increasing and were expected to rise even more after the restoration. He provided more space at each side of the entrance stone and had wooden stairways constructed there. As already mentioned, it was also to protect the entrance stone. To show the area around the entrance isn't historically accurate, O'Kelly had it paved by limestone – a kind of stone that is completely alien to the rest of the structure. (ibidem 110-111) The wall was wholly restored only on the southern side. The northern side of the monument hasn't been fully excavated which made it impossible to run the revetment around the whole mound. On the northern side, the wall is sometimes only 70 centimeters high; on this side there are no quartz stones either, the wall is built only of the ordinary cairn boulders. (ibidem 111)

The front of the passage roof had to be removed in order to restore the passage orthostats to the fully vertical positions. O'Kelly's team carefully numbered and marked each stone so that they would be able to accurately put them back after the restoration of the passage megaliths. Two decorated corbels from the passage were replaced by slabs of comparable sizes and shapes. The two original stones were moved to the National Museum in Dublin. Another megalith was shattered and had to be replaced, too. Unlike the original megaliths, the replacing stones were quarried. To

show the visitors these are not the original stones, the drill-holes from quarrying were left visible.

Another passage roof-stone, weighing only about a ton, gave the team of archeologists an opportunity to conduct an experiment on it. They didn't use a crane like they did with all the other stones, but moved it only with a ramp, rollers, levers and chocks, all made of wood, and a length of rope. "Three men moved it a distance of 15 m and through a height of 4 m in twelve hours." (O'Kelly and O'Kelly 112) The passage was enclosed within a concrete tunnel to give support to the passage stones. O'Kelly also restored the old system of water-grooves. There are drains through the structure so that no moisture can erode the structure.

As written above, the chamber itself didn't need much of restoration. The only problem was water leaking through the roof. A cowl was designed to run any water away. It proved effective and the chamber remains dry at all times. (O'Kelly and O'Kelly 113)

11.1 Controversy

Professor Michael J. O'Kelly succeeded in reconstructing Newgrange to its former glory; but as many such achievements, it hasn't been without some degree of controversy.

In his book *Newgrange: Archeology, Art and Legend* he is informing his readers that many people first disagreed with his decisions to reconstruct Newgrange the way he did. Visitors said that they preferred it before the reconstruction, when it was 'so romantic' and now it is too 'modern looking'. (O'Kelly and O'Kelly 115) However, O'Kelly did his best to make Newgrange as accurate as possible. It must have looked modern even to the Boyne people when it was first built.

Some archeologists nowadays accuse O’Kelly of sloppy work and claim that the revetment wall is false with absolute certainty. Palle Eriksen even says it is hideous and should be demolished. (Eriksen 271) Less definite is Gabriel Cooney, but he still has objections against the revetment. He claims the quartz stones were more of a platform than a facing. According to him, they were deposited in the vicinity of the tomb. (Cooney 704) In defense of Professor O’Kelly it must be said that he conducted experiments to see whether the wall was accurate or not. He built a piece of the wall and then knocked it down. The structure of the modern slippage was identical to the original one. (Uistín 83)

Some criticism came also in reference to the entrance. As written above, it is not accurate and the reasons for that were obvious. If it was rebuilt in its original appearance it would be very difficult to accommodate so many visitors.

12 Winter Solstice

During the excavations in 1960s and 1970s a so called roof-box was found. It is located just above the entrance. It is open at the front and its roof-stone is ornamented on the forward edge. The opening is small, only 90 cm high and 1 m wide. It is a unique structure that cannot be seen anywhere else. (O’Kelly and O’Kelly 21) Professor Michael J. O’Kelly found out that during the winter solstice and about a week before and after the day, the rays of rising sun shine through the roof-box to the passage and as far as the chamber and enlighten it. He had this suspicion long before it was confirmed. One morning in December of 1967 he drove all the way from Cork just to see if he was right. He actually was and became the first person after 4 thousand years to witness the sun shining into the tomb. (Professor)

The builders of the tomb must have been planning this phenomenon to happen; it would be peculiar to be only a coincidence. As we've already established, the passage to the tomb is almost 19 m long and its floor rises with the hill on which is the tomb built. During a normal day, the tomb is very dark and when the lights are off, one can see absolutely nothing. But around the winter solstice sunrise, people can first see only a narrow beam of light, which after a while widens and swings across the chamber to illuminate the end recess. The designers of the tomb must have spent years observing the sun and calculating where exactly should be the entrance and the roof-box built. Obviously, the sun doesn't shine in, when it is cloudy, which is quite common in the Irish climate. If the builders were extremely unlucky, they had to wait another year to make the necessary calculations. On the other hand, O'Kelly states that at least one day of the week around the solstice, there has always been sunlight since the discovery. (O'Kelly and O'Kelly 124)

The sight starts at 8:58 and ends at 9:15. "For 17 minutes, therefore, at sunrise on the shortest day of the year, direct sunlight can enter Newgrange, not through the doorway, but through the specially contrived slit which lies under the roof-box at the outer end of the passage roof." (O'Kelly and O'Kelly 124)

But how did Professor O'Kelly even come to think about the possibility of the sunlight inside the tomb? There were legends told about a beam of sunlight shining to the tomb sometimes during the year. Another tale talked about such phenomenon in midsummer, yet another told the story of the sun itself entering the tomb. The stories were the same in one thing – a sun shining directly on the three-spiral stone in the end recess. "No one could be found who had witnessed this but it continued to be mentioned and we assumed that some confusion existed between Newgrange and the midsummer phenomenon at Stonehenge." (O'Kelly and O'Kelly 123) O'Kelly knew

the midsummer couldn't be correct, but at the same time started considering the winter time, because that's when the sun shines in the quarter of the entrance. Fortunately, he investigated it and found out about the winter solstice light. We have to say, he was still lucky to do so. Since the time the tomb has been built, the Earth moved a little in relation to the Sun. (Uistin 85) If it had moved too much, the purpose of the roof-box would remain hidden to us.

It stays a mystery, why the Boyne people made the roof-box let the sunlight penetrate the tomb on the shortest day of the year. It is possible the day was sacred to them. It promised the day to become longer again; people could start looking forward to summer and the end of winter.

13 Newgrange in Early Irish Literature

Newgrange's place in early Irish literature and traditions is no less interesting than the antiquarians' and historians' reports. "Despite the decline in the Boyne passage tomb culture and the deterioration of the mound itself, an atmosphere of mystery continued to envelop the great mound." (Uistin 97) There are many colorful legends and superstitions concerning the site. The earliest legends concern the magical tribe of people known as the Tuatha Dé Danann.

Tuatha Dé Danann means 'the people of the goddess Danu'. These god-like and supernatural beings, who ruled Ireland in ancient mythology, are said they built Newgrange as a burial place for their ruler, Dagda Mór. (101 Facts 11) Dagda's mistress was called Boann. And after her is the whole area around the river Boyne named. (MacPherson 119) Dagda and Boann had a son Aengus, who in some other stories is the owner of Newgrange.

Another story about these people says, that they were conquered by Celtic people called Milesians, and because didn't want to live in grasp of the newcomers, they chose to live underground in tombs such as Newgrange. "It appears that imagined glimpses of the Tuatha Dé Danann, together with tales of their supposed magical powers, gave rise to the later tales of enchanted folk or fairies dwelling in the mound at Newgrange," (Uistin 98)

Cú Chulainn is also associated with Newgrange. He was one of the greatest of all the ancient heroes. He might have inspired even the English legend 'Sir Gawain and the Green Knight'. (Curran 113) Cú Chulainn is said to be conceived in Newgrange and many of his adventures occurred in or near the Boyne Valley.

The Pursuit of Díarmuid and Gráinne is one of the best known love stories of ancient Ireland. The god Aengus, the son of Boann and Dagda fostered Díarmuid. Díarmuid joined the Fianna warrior band. According to tradition, the Fianna were warriors who defended the High King and kept the peace. Their leader at the time was Fionn Mac Cumhaill, a man with magical healing powers. (Uistin 99) Fionn was promised to marry the daughter of the High King of Ireland, Gráinne. But at the time, Fionn was already an ageing man and Gráinne didn't want him. Instead, she fell in love with Díarmuid. As a warrior of honor, Díarmuid was reluctant to involve with her, but she put him under a magical spell to convince him to elope with her.

Naturally, Fionn was angry and set out in pursuit of the couple. But the god Aengus protected Díarmuid and Gráinne and after some time succeeded in making peace between Fionn and Díarmuid. By that time, the young man was deeply in love with Gráinne and made her his wife. A few years later Díarmuid went to a hunt and got seriously wounded. His only hope of recovery was Fionn's healing power, but as

he still felt bitter about Gráinne and Diarmuid, he refused to help and let Diarmuid die. Aengus then took the corpse of his beloved foster son to Newgrange for burial and told Gráinne that the dead body of her husband would speak to her every day. (O'Farrel 43)

While there are legends about Tuatha Dé Danann and Newgrange, there are also legends about it being a burial place for the High Kings of Ireland. The High Kings of Ireland were sometimes historical figures, sometimes purely legendary people. They are claimed to have dominion over the whole of the island. According to legends, they ruled from the Hill of Tara for almost a thousand of years. (Curran) There is a legend concerning the King Cormac Mac Airt, the father of Gráinne. He is believed to rule sometimes between the years 227 and 266 AD. His palace was at Tara, which was a center of the royal power in Ireland back then. It is now believed that many stories about Cormac are authentic. But of course, there are legends about him that were most likely made up. One of them concerns Cormac's death. It is said he was a first Christian in Ireland even though he had lived a hundred of years before St. Patrick came to the island. It seems the first Christians devised the story to support the new religion in the country.

Nevertheless, as it is said, Cormac's dying wish was not to be buried at Sí an Bhrú as Newgrange was called, but at Ros na Rí, a place southwest of Newgrange. The druids didn't obey and still wanted to bury him at the royal burial place of Newgrange. While the funeral procession was crossing the river Boyne, a wave rose and prevented them from doing so. They tried again and again, but after the third attempt, a huge wave swelled up and took the King's body away. The waters cast his body at Ros na Rí. The druids then followed Cormac's dying wish to be buried there. (Uistin 102) While it is interesting to listen to such stories, we know they couldn't be

true. At the time the Kings of Tara were at the height of their glory, Newgrange had already been deteriorating for 2 thousand years.

There are also many superstitions concerning Newgrange. One of them says that Newgrange is a dwelling place of the ‘slua sí’ – fairy host. People believed the Sí could spirit a child from its cradle and leave a fairy in its place. People also believed that anybody could be placed under a spell of the fairies and taken with them to their underground homes such as Newgrange or other tombs at the Boyne Valley. (Uistin 103) We can easily imagine why people left the mound of Newgrange for centuries to stay without notice.

One would think that with the modern excavations and archeological finds, people would stop trusting legends and superstitions concerning the tomb. The majority perhaps did, but there are still some who try to find a supernatural or even extraterrestrial origin of the tomb. One of those people is the Swiss author Erich von Däniken in his book *Raumfahrt im Altertum*.¹⁶ He asks the questions such as ‘who ordered the building of the tomb’ or ‘who made it up that at the winter solstice the tomb would be illuminated’. He implies there must have been some higher, perhaps extraterrestrial, power. (Däniken 32) The author lets the readers to consider this theory on their own.

14 The Art of Brú na Bóinne

The ornamentation of the stones both inside and outside the tomb is one of the most fascinating features of Newgrange. Ever since Edward Lhwyd pointed the ‘rude and barbarous carvings’ out, people were interested in it. (O’Kelly and O’Kelly 146)

¹⁶ The author couldn’t find any English translation of the book, but it means ‘Space Flights in the Antiquity’.

We can find single, double, and triple spirals, lozenges, arcs and curves. Historians agree the carvings are excellent work of the ancient artists even though some are better quality than the others. (MacPherson 118)

It is important to remember that no writing has been found in Newgrange, the decorations were purely geometric and in some cases illustrative. We can recognize figures, trees or animals in them. Those are unfortunately the less known motifs and not the best-conducted ones.

The carvings weren't found on all the megaliths in Newgrange, which suggests only somehow important stones were decorated. As already mentioned, one of the best known examples is the entrance stone or the K52. There were even stones that were decorated, but remained hidden from the sight. They were for example the two stones that Professor O'Kelly had moved to the National Museum in Dublin, so that people could see the ornamentation.

The entrance stone and the K52 have already been spoken about. They are considered the best examples of the Newgrange art. There are spirals and lozenges on the entrance stone. K52 is ornamented with spirals, lozenges, chevrons, curves and circles. O'Kelly states the technique with the two is very similar and therefore they might have been carved by the same artist. (O'Kelly and O'Kelly 150)

As we've already mentioned, the triple spiral of the end recess, has become perhaps the best known motif of the Newgrange art. In the legends it was this spiral that got illuminated by the sunlight. Nowadays it is even difficult to spot it, because the orthostat on which it is carved has moved slightly forward. The carving can be seen only when the visitors look directly into the recess. It is interesting the spirals are

the best known from Newgrange, but they are not the most common there. We can see way more lozenges, zigzag (chevron) patterns and circles. (O’Kelly and O’Kelly 147)

The decors were usually carved on the natural surface of the slab by making a series of small pits or pickings with the use of a sharp point. (O’Kelly and O’Kelly 149) O’Kelly also states that some of the poorer and unfinished designs were probably incised, cut or scratched. (ibidem 149) Most of the carvings on the stones were done before the stones were placed to the structure. However, some were decorated only after their placing.

The meaning of the patterns has been a mystery. A lot of authors tried to find its purpose and many different interpretations were given. The truth is, we will probably never know the purpose of the carvings, but we can assume they had either religious, decorative, or even astronomical significance. Some people see human faces in some of the carvings. There is an orthostat in the passage, that’s been called the Guardian Stone. The hair is a zigzag pattern, the nose is a lozenge, the eyes are a double spiral, the mouth is another spiral; the whole motif leaves the impression of a gaping face. Because the stone is at the very place, where the passage bends towards the chamber, some say it was deliberately placed there to frighten those entering the tomb. Some people even believe that the tomb has a guardian spirit watching over the remains of those buried there, hence the name Guardian Stone. (Uistin 64)

We can see many things in the carved motifs. Jacqueline Garnett gives a broad explanation of some of them in her book *Newgrange Speaks for Itself*. She thinks the zigzag patterns might reference Milky Way, circles represent sun, spirals can be planetary movements, arcs could be rainbows, lozenges are gates etc. (Garnett)

15 Knowth and Dowth – the other tombs in Brú na Bóinne

Knowth and Dowth are the other two large megalithic passage tombs in the area of Brú na Bóinne. They are comparable in size to Newgrange and are both visible from there. In fact, when you're standing at one of them, you can always see the other two.

15.1 Knowth

Knowth is the second oldest tomb of the three. The mound has 67 meters in diameter. The great mound of Knowth has 17 smaller satellite tombs around itself. All of the mounds contain passage tombs, some simple, others more complex, some of the mounds were almost destroyed. (O'Kelly 100) Even though it is less-known than Newgrange, it is more complex. There are two passages in the tomb. The eastern passage is about 40 meters long and leads to a cruciform chamber just like the Newgrange one. The western passage is about 34 meters long and opens to an undifferentiated chamber separated from the passage by a still stone. (Curran 174) The passages were hidden for many centuries and separately rediscovered in 1967 and 1968.

The chambers of Knowth are only 3 meters apart and both located almost at the center of the mound. In the eastern chamber there are basin stones in the recesses. The roof is corbelled like the one in Newgrange. The western chamber is flat-roofed. "It is less striking than the chamber on the eastern side, which is a magnificent example of Megalithic architecture." (Ustin 52)

It was believed the chambers were aligned to catch rays of the rising and setting sun at the equinoxes. This was disputed and later Frank Prendergast and Tom Ray disproved the theory. (qtd. in Knowth Megalithic)

The base of the mound was originally surrounded by 127 curbstones, 30 more than in Newgrange. Three of them are now missing and four of them are badly damaged. (Curran 174) Some of curbstones and many other stones are finely decorated. Actually, we can find the largest collection of Neolithic art in Western Europe in Knowth. There are over 200 decorated stones; some of them are typical for the time – spirals, lozenges, chevrons etc; and some of them are less typical. (Knowth)

Knowth remained used for various purposes until the end of the Middle Ages. The initial role was similar to the one of Newgrange – ceremonial and religious. Later, the Beaker people would use it for burial and habitation purposes. After the Beaker people, there was far less activity at the site (Uistín 53) During the first century BC and the following one, the place was used as a burial site again. This time, people were buried in the ground, not cremated.

After that, Knowth never regained its sacral function again. (Uistín 53) People started living in the area in the early Christian era, around 450 AD. There were habitations built right on the top of the mound. Two huge ditches were dug, one near the top of the mound, the other at the base of the mound. It is probable that some chieftan was defending his territory. We can still see the remains of the ditch and habitation on the pictures of the mound. “The site continued in use as a defended location right through to the Middle Ages.” (Early Christian Ditch) There is evidence of small farmhouses from sixteenth and seventeenth century, but at the time, people had already left the mound itself and lived only in its proximity.

Like Newgrange, Knowth was granted official protection in 1882. The excavation of the monument became in 1962 after the state purchased the land around it. The works on the monument were led by Professor Eogan.

15.2 Dowth

Dowth is the youngest of the three large mounds of Brú na Bóinne. It is the largest one – in diameter it is approximately 85-90 meters long. Like the other two mounds, it is surrounded by curbstones, of which some are decorated. The name of the tomb comes from ‘dubad’, the old Irish word for darkness. “Its full name in Irish is Sí Dubhaidh, meaning the Fairy Mound of Darkness.” (Uistin 56)

There are two passage tombs within the mound. As already mentioned, both the passages are in south-western quadrant. The passage located more to the west is referred to as the northern one, the other is the southern one. The northern passage is 14 meters long and leads to a cruciform chamber. In the southern or right-hand recess, there is an L-shaped annex of two cells. On the floor of the main chamber, there is a basin stone. However, it is believed it was moved from its original position in the right recess to the right. (Uistin 58) The southern chamber is circular one recess on the left side. Roofs of both of the chambers are corbelled, but more modest in height than the ones in Knowth and Newgrange – only 3 meters. The roof in the southern chamber, however, collapsed in ancient times and has been replaced by a concrete roof. (ibidem 58) The passage leading to the southern chamber is only 3.5 meters long. The two passages are approximately 12 meters apart.

In Dowth, there are estimated about 115 curbstones, of which only 51 are visible. Fifteen of them are decorated. One of the best known examples is the Stone of Seven Suns. This stone cleverly accentuates the rays of a wonderfully carved sunburst. (Uistin 59 and Dowth – Brú na Bóinne) However, the art of Dowth seems less sophisticated than with its two neighbors. The carvings are shallow and less visible. Nevertheless, we can find the familiar lozenges, circles, chevrons and spirals on the stones of Dowth. There was found debris of quartz stones outside the line of

curbstones surrounding the mound. (Uistin 59) It suggests Dowth might have had a similar revetment wall as the neighboring Newgrange.

There is a crater in the center of the mound. That is because of unprofessional excavations in 1847, which severely damaged the mound. The people executing the excavations were looking for a central chamber and dug a lot of material. Nowadays, the mound is about 15 meters high, but it is likely that originally it was lower. The highest point represents dug up material from the 1847 excavations. “Subsequently the mound was subject to quarrying.” (Dowth – Brú na Bóinne) Along with the other two tombs, Dowth became protected in 1882 and is waiting for excavations ever since.

“Dowth shares a solar alignment with neighbouring Newgrange during the winter solstice.” (Dowth – Passage Tomb) This time, sun shines into the southern chamber of Dowth when setting. There is no roof-box like in Newgrange, the sun enters through the entrance and the effect is very dramatic. (Uistin 59)

Dowth used to serve as a settlement for thousands of years, just like Knowth. In Middle Ages, people dug a souterrain in the mound. It shared the entrance with the northern passage and was invisible from outside. People used it to store important commodities and as a place of refuge in case of danger. Similar souterrains were found in the hill, where stands Knowth, but there were no such structures built within the tomb itself. It makes the Dowth souterrain unique.

16 Newgrange Today

Ever since the end of excavations in 1970s Newgrange has become a major tourist attraction. As many as 200,000 visitors per year visit the site. In 1993, the area

of Brú na Bóinne was added to the World Heritage List. In 1997, a new visitor center was built to support the floods of tourists.

The visitor center is about 2 km far from the Newgrange tomb. There are shuttle buses every 10 to 15 minutes taking the visitors to the site and are the only mean of transport to the tombs. Knowth and Newgrange are open for visits, Dowth however is not. Visitors can go to the youngest mound by themselves, but cannot enter it.

During their visits, people can go inside the tombs of Knowth and Newgrange with a guide and look around the mounds. Knowth can be even climbed as there is a small exhibition at the top of the mound.

Newgrange is open for the whole year except for December 24th through to 27th; Knowth can be seen from the beginning of April to mid-October. In the visitor center, there are replicas of the Neolithic habitations, clothing, boats, weapons, paintings of building the tombs and many other interesting things. “The highlight of the exhibition is a full-scale replica of the passage and chamber of Newgrange.” (Uistin 108)

During their visit, people can fill in short forms and enter the annual draw. Because almost everybody would like to see the winter solstice sunrise in Newgrange, the keepers of the site came up with the draw. Anybody can enter and in October or November, a few lucky ones are drawn from a huge pile of forms. These people can come to Newgrange at the time of solstice and enjoy the spectacle personally in the tomb.

17 Conclusion

The Brú na Bóinne sites are extensive storehouses of information about the history from Neolithic period to modern times. It has been an important ritual, social and economic center for thousands of years.

In this thesis it was dealt with building of the tomb of Newgrange, its rediscovery in 1699, excavations and restoration of 1960s and 1970s. The tomb was described to the detail and it was dealt with its art and place in literature.

There are many passage tombs in Ireland, but the ones in the Boyne Valley are perhaps the best known. Newgrange has its own share on the success, possibly the biggest one. Its revetment wall, which was renovated by Professor O’Kelly during the vast excavations, has been bringing attention of thousands of people – some of them claiming it shouldn’t be there, the majority admiring the skills of the Neolithic builders.

Newgrange is also famous for its so called ‘roof-box’. The roof-box is a structure that has drawn people to the site for several decades now. It is a unique piece of architecture that hasn’t been found anywhere else. It was built with preciseness and great effort, to let the sun during the winter solstice penetrate a 20 meters long passage and illuminate the chamber under the mound, which is on any other day sunk into darkness.

Newgrange was built 5,000 years ago as a burial and ritual place. People of the Neolithic era must have put great effort and time in building such a large structure. It took years, perhaps even generations before the monument was built.

After the Boyne people left, the monument started decay until the team of Professor O’Kelly restored the mound to its former glory. Naturally, Newgrange attracted people for thousands of years and now anybody can go and see the masterpiece of the Neolithic architecture.

Even though they are far less popular and famous, Knowth and Dowth, the other two large mounds in Brú na Bóinne, are no less interesting than Newgrange. It might be interesting to write a similar work about them and compare them to Newgrange as there are many similar features.

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Anotace

Bakalářská práce Newgrange se zabývá památkou Světového dědictví UNESCO Brú na Bóinne a jejím nejznámějším pahorkem zvaným Newgrange. Práce vysvětluje, proč a jak byla hrobka postavena. Zároveň sleduje její cestu dějinami, kdy byla ztracena a později znovuobjevena, odkryta a zrekonstruována.

Autorka popisuje umění nalezené v hrobce a snaží se vysvětlit jeho možný význam. Práce se také zabývá unikátní konstrukcí takzvaného ‚roof-box‘, který umožňuje slunci za úsvitu nejkratšího dne v roce, aby ozářilo síň vybudovanou uvnitř pahorku.

Klíčová slova

Neolit, Irsko, Newgrange, chodbová hrobka, pahorek, Brú na Bóinne, řeka Boyne

Abstract

The bachelor thesis Newgrange is dealing with the World Heritage Site of Brú na Bóinne's best known mound called Newgrange. The thesis explains why and how the tomb was built. It follows its path through the history when it got lost and later rediscovered, excavated and renovated.

The author describes the art found at the tomb and its possible meaning. The thesis also deals with a unique structure called 'roof-box' which allows the rising sun at winter solstice to penetrate to the tomb and illuminate its chamber.

Key words

Neolith, Ireland, Newgrange, Passage Tomb, Mound, Brú na Bóinne, Boyne river

Appendixes

Picture 1

Interior of the Boyne Valley houses. The picture is taken at the Visitor Center of Brú na Bóinne.



Picture 2

Exterior of the Boyne Valley houses. The picture is taken at the Visitor Center of Brú na Bóinne.



Picture 3
Newgrange outside



Picture 4

The entrance stone and the roof-box above the entrance.



Picture 5

The stone K52.



Picture 6

Newgrange from outside. The end of the revetment wall is visible.



Picture 7

A scene of the monument building placed in Brú na Bóinne Visitor Center.



Picture 8

A triple spiral. The probably best known motif of the art in Newgrange. The picture was taken in Brú na Bóinne visitor center.



Picture 9

An aerial view of Newgrange.



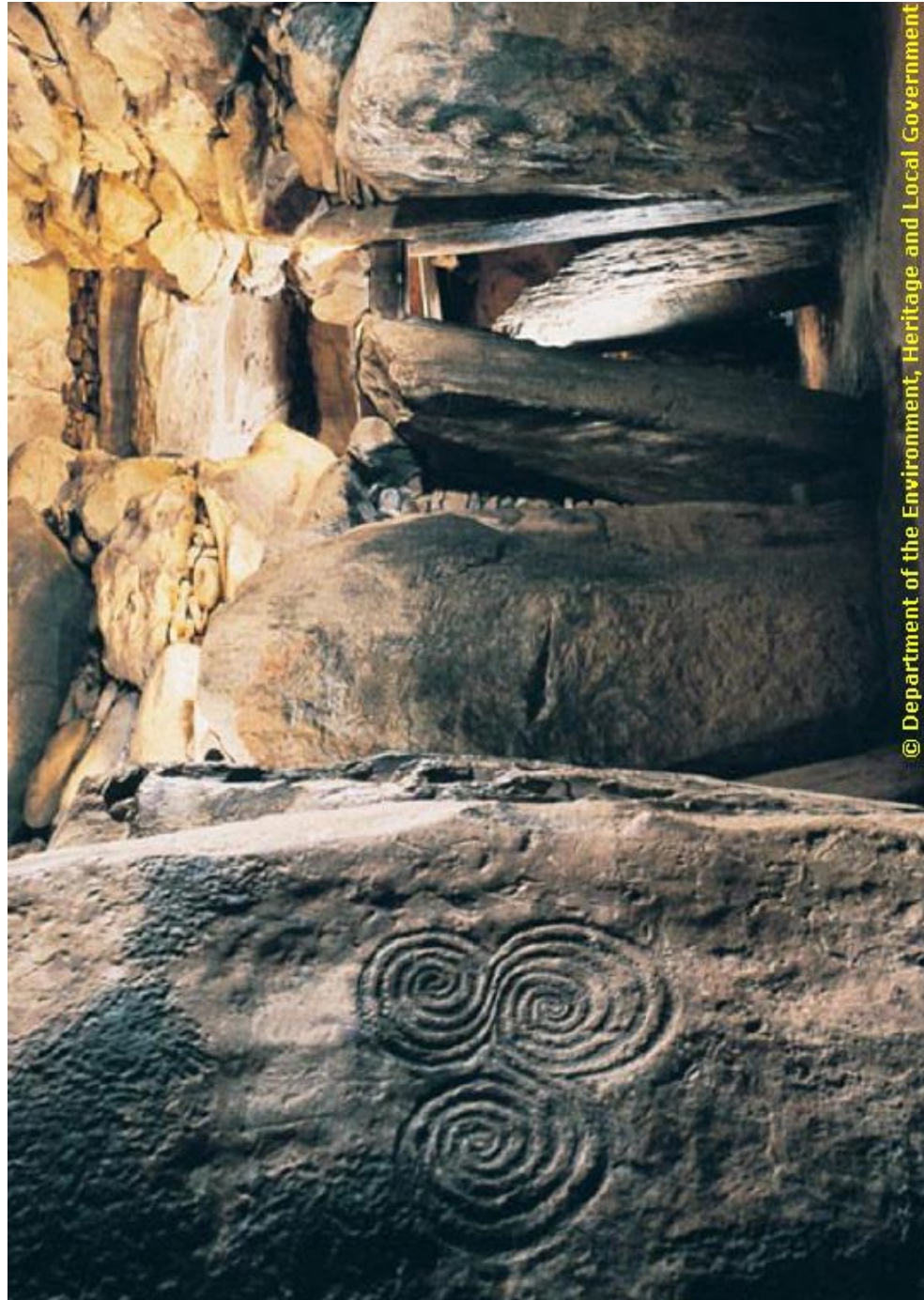
Picture 10

The passage to the tomb at winter solstice.



Picture 11

The chamber of Newgrange.



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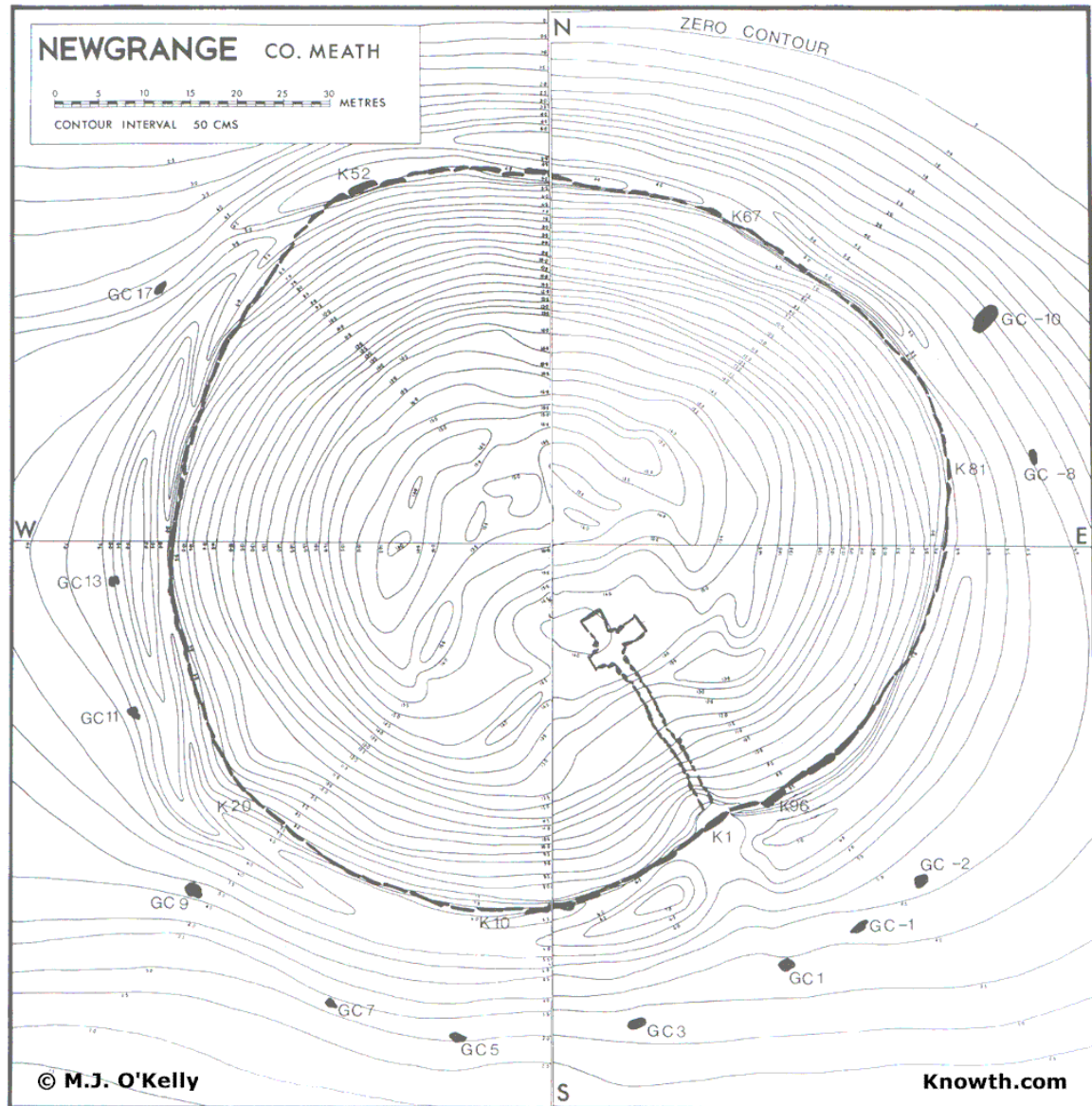
Picture 12

Newgrange before restoration.



Picture 13

Plan of Newgrange. GC marks the great circle stones, K marks curbstones.



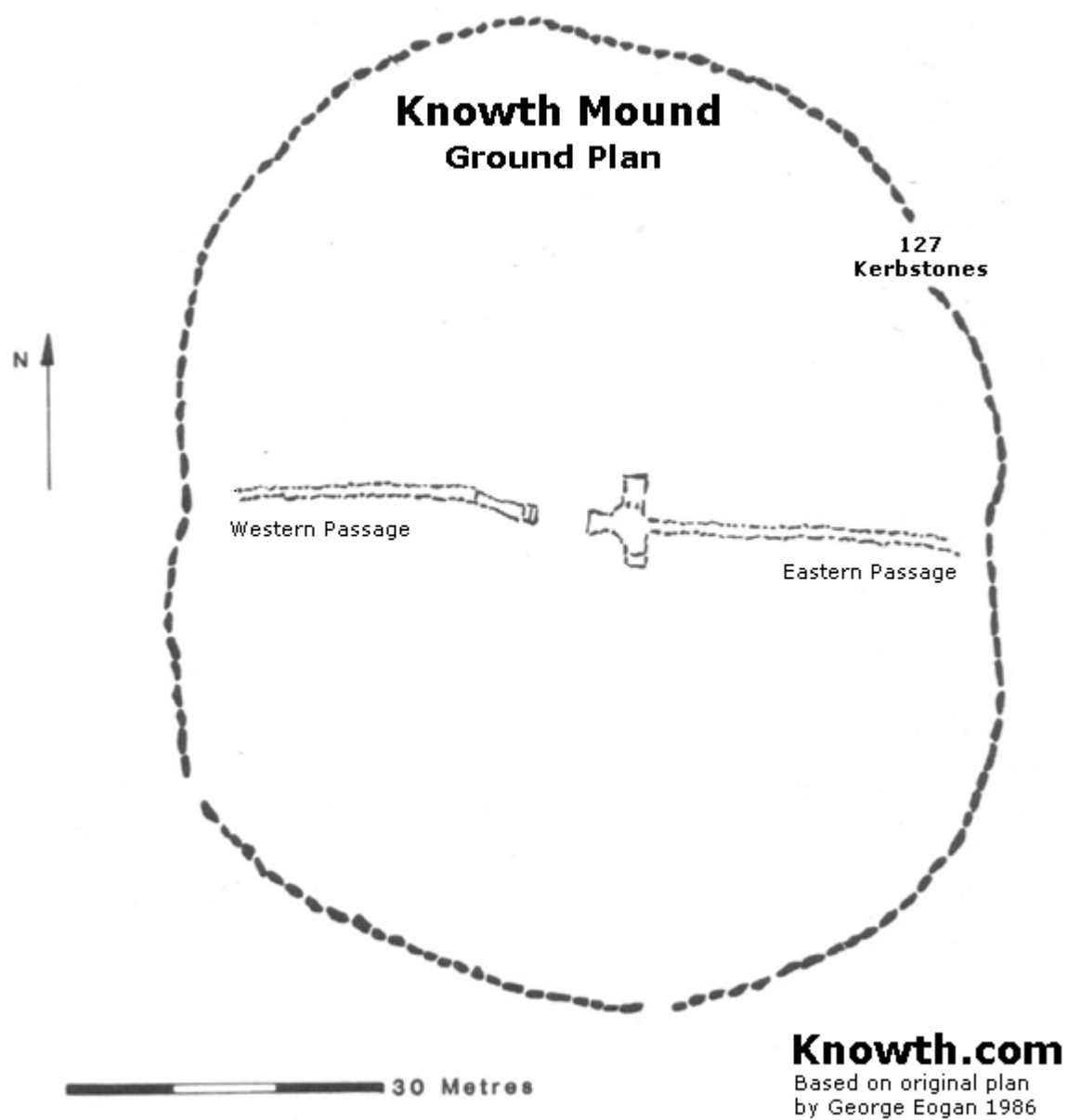
Picture 14

Knowth with its satellite tombs, an aerial view.



Picture 15

Plan of Knowth.



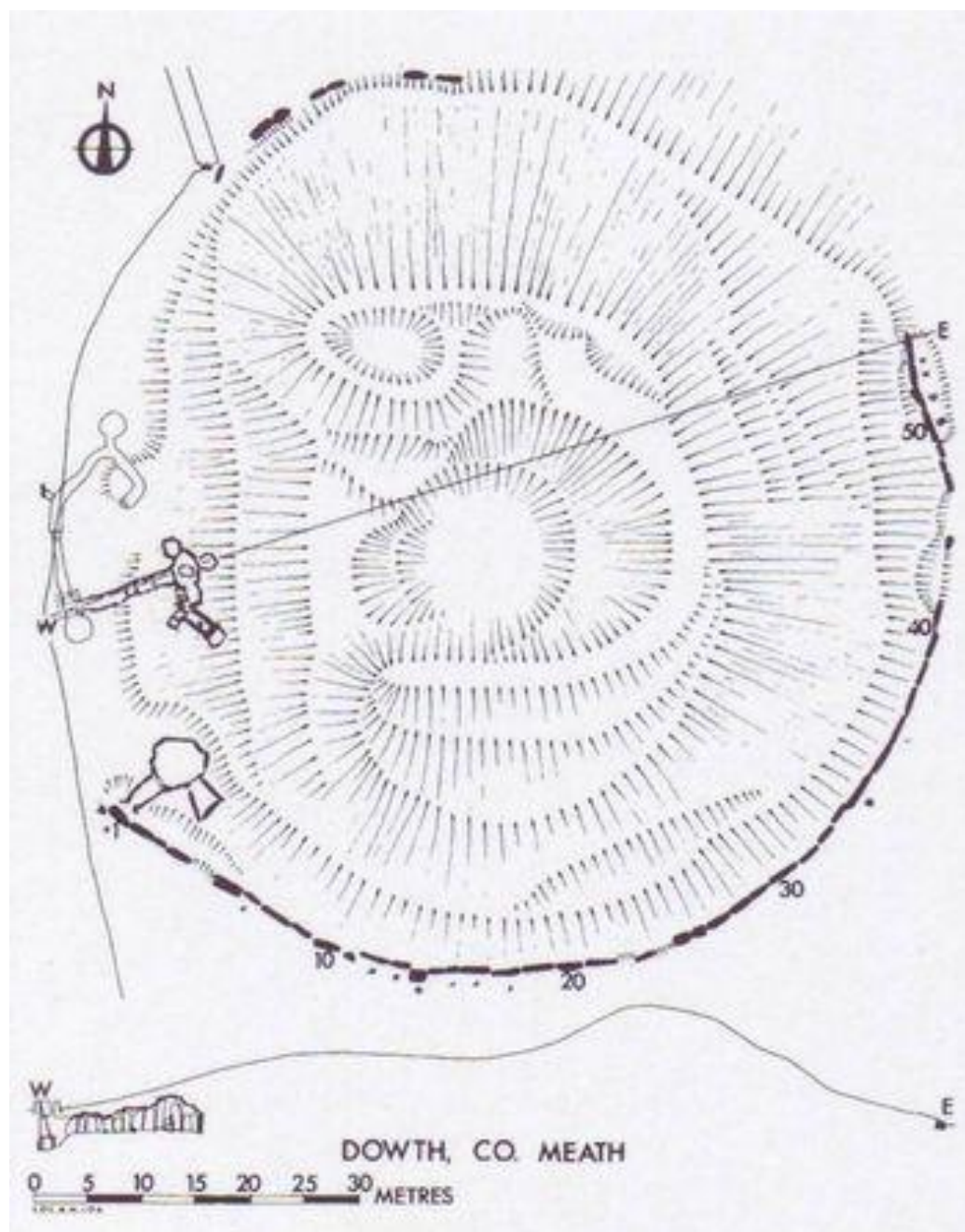
Picture 16

Dowth, an aerial view.



Picture 17

Plan of Dowth including its souterrain.

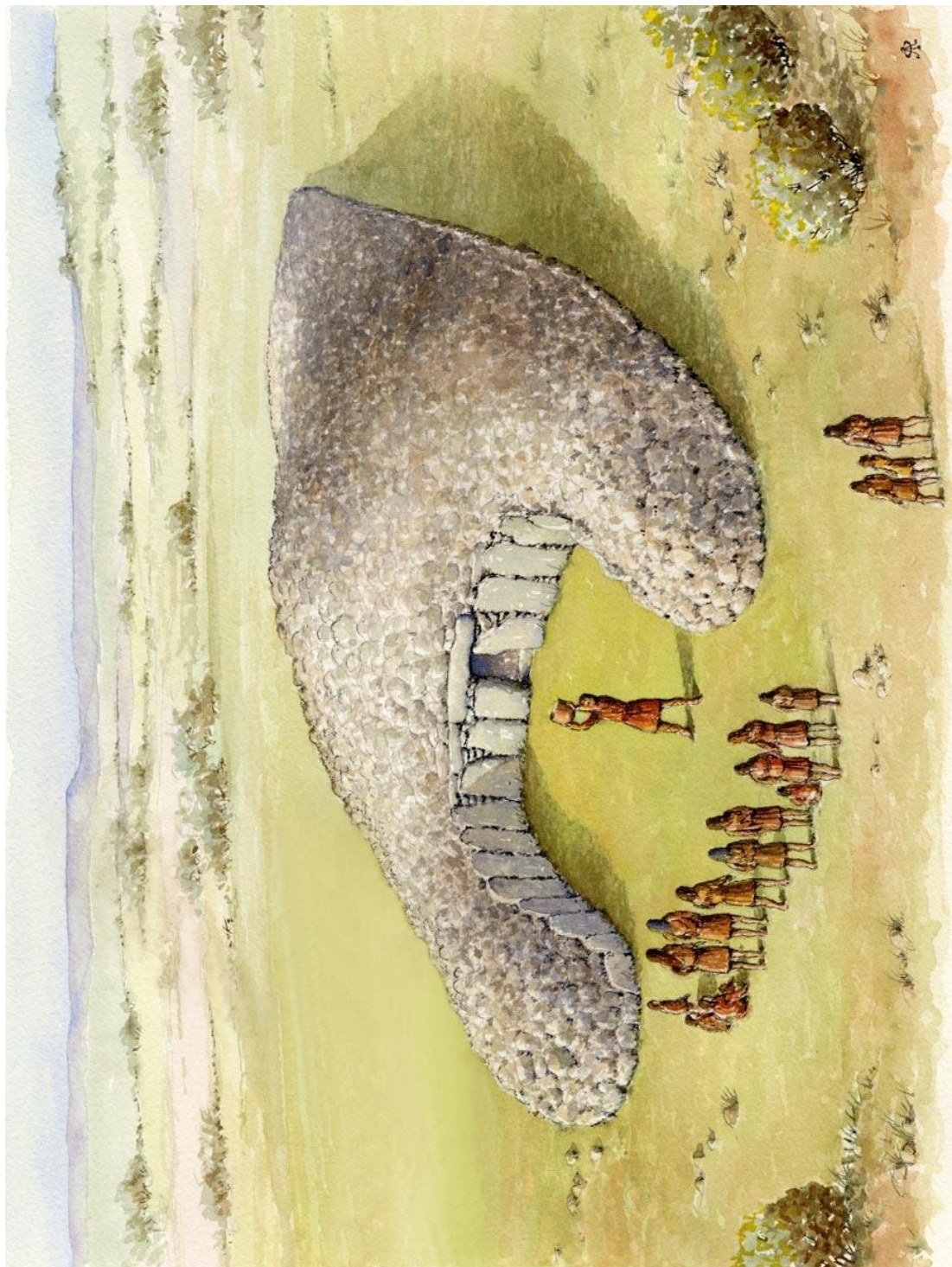


Picture 18
Portal tomb.



Picture 19

Court tomb as it probably looked like in Prehistory.



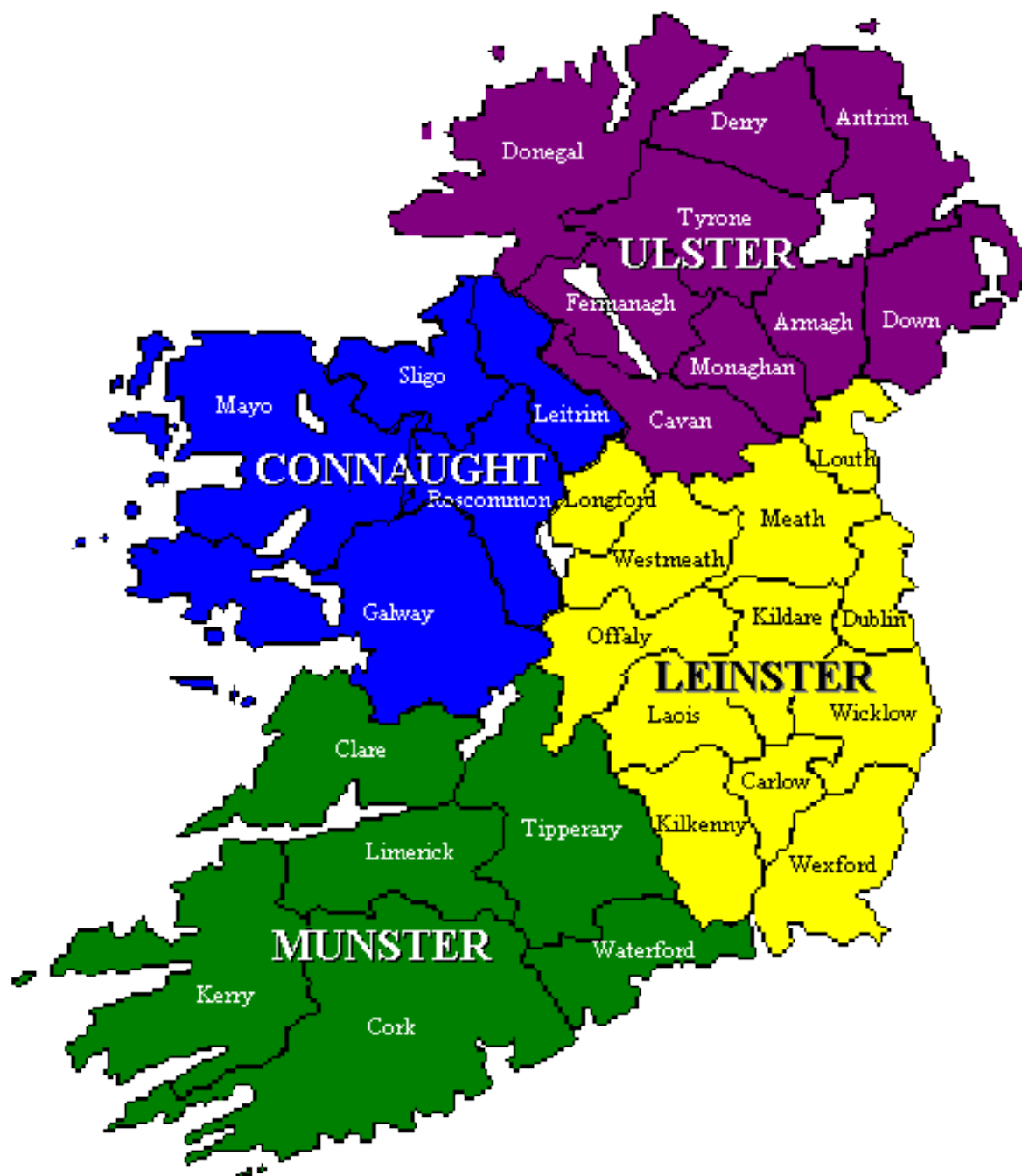
Picture 20

Wedge tomb as it probably looked like in Prehistory.



Picture 21

Map of Ireland with the provinces and counties.



Picture 22

The location of the Boyne Valley.



Map of the Boyne Valley.



Resources for the photos, maps and plans

Pictures 1-8

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Picture 9, Picture 13, Picture 14, Picture 15

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Picture 19, Picture 20

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Picture 21

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