

REVIEW ARTICLE

THE COSMOLOGY OF THE ANCIENT BALTS

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1. Historical Background

In the present territories of Lithuania and Latvia archaeologists find habitation sites established eleven or twelve thousand years ago, at the end of a 60,000-year-long glacial period during which the Baltic region was under the ice sheet at least for three long periods. With the recession of the ice, the land gradually turned into tundra with herds of reindeer going further north in the summer. Reindeer were followed by hunters who left their permanent settlements somewhere in the northern parts of Central Europe. These were men of the Paleolithic Swiderian and Magdalenian cultures, armed with spears, bows and flint-head arrows, bone and horn harpoons, and stone slings, and followed by their domesticated dogs. Art finds that reflect the spiritual world of the Paleolithic man are scarce. However, burial grounds of that period have survived to the present day. The fact that ancient people were buried together with their clothes, decorations, daily-life utensils and weapons witnesses to their belief in the afterlife. An image of the heavens, as an extension of the earth, may also appear in the Paleolithic, the starry sky being inhabited by different animals, while the Sun and the Moon were symbolically imagined as deer.

In the Mesolithic (7500–3500 B.C.) the Baltic area was gradually covered by forests with abundant fauna. The people of the Nemunas and Kunda cultures who inhabited these forests lived on hunting, fishing and gathering the food that nature provided. From that period, a number of artifacts, made of bone and decorated with ornaments demonstrating some kind of a symbolic script, have survived to our day. Among them is the symbol of the Sun, a circle, and the symbol of fire, a cross with arms of equal length. It is quite probable that the myth of European and Asian peoples that explains the world as formed from a duck egg, originated in the Mesolithic or even earlier. According to one of Lithuanian versions of this myth, the primordial egg exploded into fragments which gave birth to different parts of the world: the egg yolk turned into the earth, the egg white turned into the waters and the egg shell gave birth to the heavenly sphere, which was full of stars. More information on the Paleolithic and Mesolithic in the Baltics can be found in the monographs by

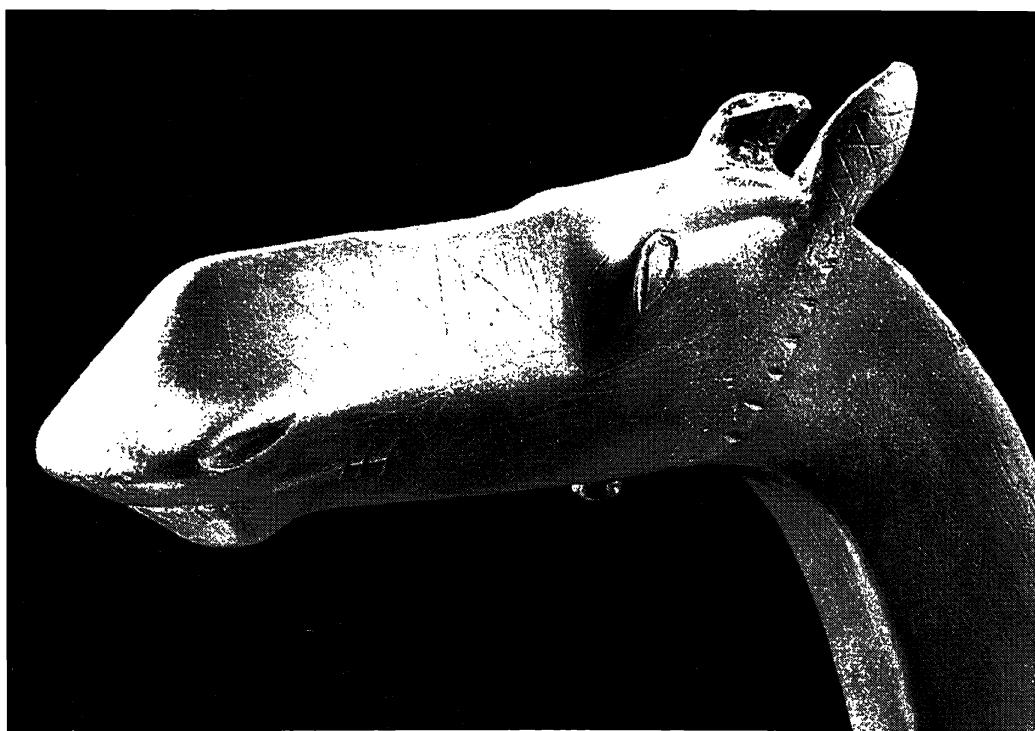


FIG. 1. One of the ritual bone staffs with a she-elk head found in the Šventoji settlement (2400 B.C.).

Rimantienė¹ and Gimbutienė (known in the West as Marija Gimbutas).²

In the fourth millennium B.C., artifacts made of polished flint with perforated holes, fishing nets and fired pottery appear on the coasts of the Baltic sea, products that belong to the Neolithic. At that time, people of two Neolithic cultures, Nemunas and Narva, were living in the continental Baltic area. They differed in their pottery types and in the comparative distribution of bone and horn artifacts. Although they continued to depend on hunting, fishing and food-gathering, they display a knowledge of the rudiments of cattle-breeding and agriculture. From that period, we find an increase in the number of art objects, made of amber, bone and wood. Pottery is decorated with geometric ornaments and imagery of animals, birds and men.³ It is quite probable that both Mesolithic and Paleolithic man had totems, that is, that some animal occupied pride of place in their worship; in western Lithuania the she-elk was such an animal.

Excavations in the Šventoji settlement⁴ revealed three beautiful ritual bone staffs with tops in the shape of the head of a she-elk (Figure 1).⁵ Such staffs may have been used by shamans performing pre-hunting rites. In eastern Lithuania and in Latvia numerous deer figurines have been found. By analogy with other mythologies, we can suppose that the men of the Nemunas and Narva cultures considered the Goddess-elk or Goddess-deer to have a specific power, such as life-, fertility- and birth-giving. Even the present Lithuanian Advent songs mention a she-deer with nine horns. Some European myths portray two she-elks, women, birth-givers of the world.⁶

It is also probable that Neolithic man started worshipping the grass-snake which is often represented by bone and horn figurines and frequently occurs in pottery decoration.⁷ Primeval worship of gods and demons in the shape of animals expressed the idea of human identification with them after death, metempsychosis. In addition, an important place in cultic rites was given to fire.⁸

In the Neolithic, anthropomorphic gods appear, as evidenced by a two-metre-high wooden sculpture of a man found in the Šventoji settlement (Figure 2),⁹ by amber figurines of the Juodkrantė (Schwarzort) settlement,¹⁰ by a bone figurine found near the Kretuonas lake,¹¹ and by the Nida pottery decorations.¹² A number of

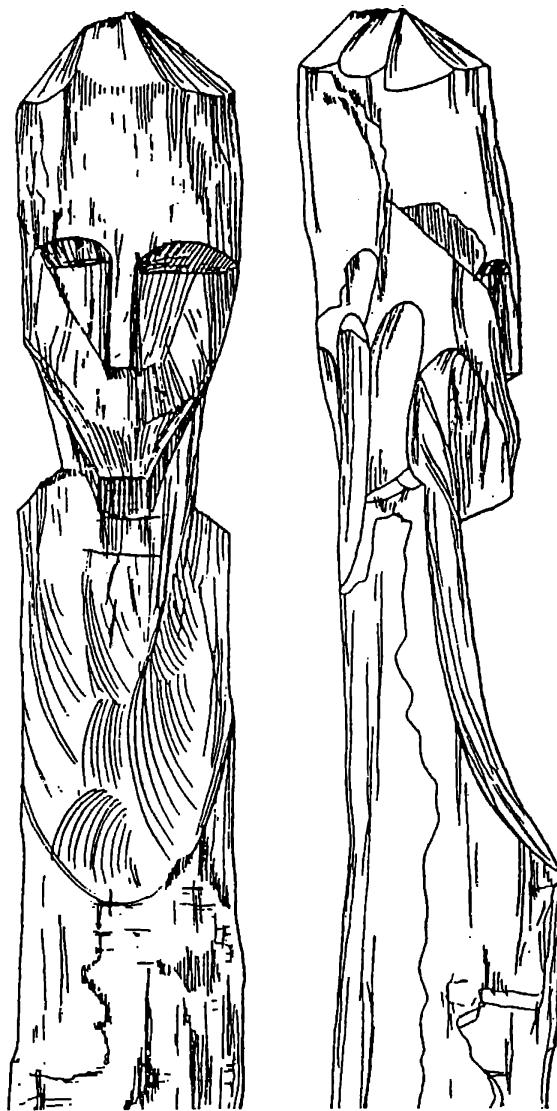


FIG. 2. The wooden sculpture found in the Šventoji settlement.

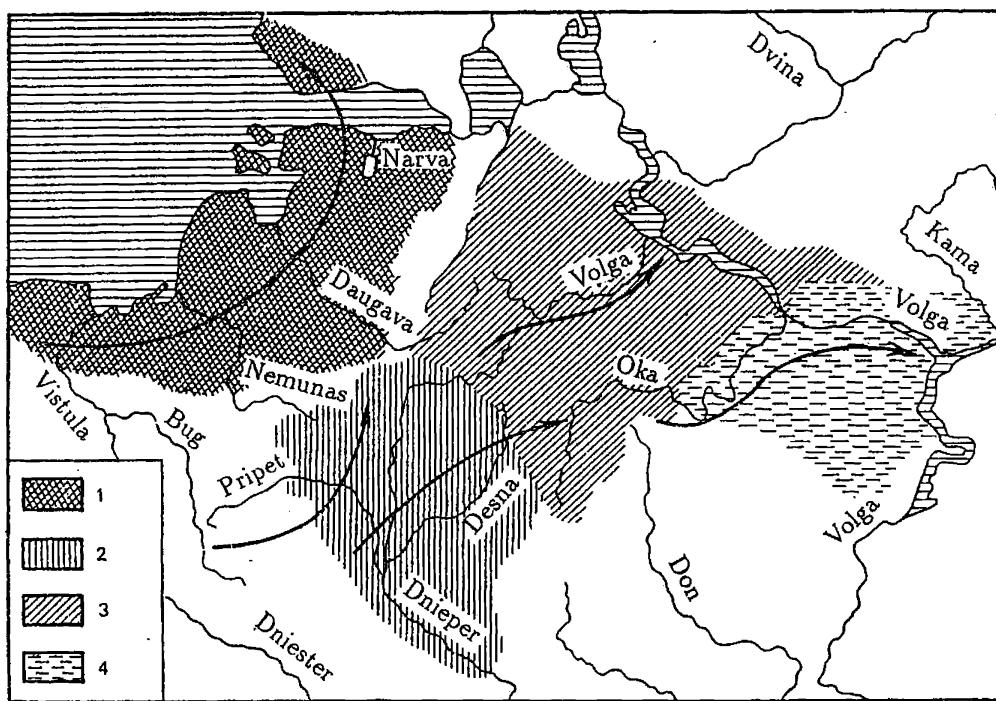


FIG. 3. The area of the Pamarian Corded Ware culture and other cultures, the ancestors of the Baltic nations: 1. Pamarian culture, 2. Upper Dnieper culture, 3. Fatyanovo culture, 4. Balanovo culture. Arrows show the directions of spread of the Indo-Europeans.

bone and clay figurines of antropomorphic beings have been found in the Neolithic settlements in eastern Latvia.¹³

There is no doubt that in the Early Neolithic the people of Nemunas and Narva cultures lived in a matriarchal community. It is also thought that main deities of that time were female, that is, goddesses. This is a common feature of all the cultures of Old Europe.¹⁴

The fourth millennium B.C. witnessed important historical processes connected with the Indo-European invasion.¹⁵ First, in the steppes of eastern Europe (in the basins of the Donn, Dnieper and Dniester) there appeared the so-called Kurgan tribes, mobile and warlike horsemen, stock-breeders and nomads, who assimilated the Charpathian-Balkan culture of the Old Europeans. A millennium later another wave of occupants invaded the Danube area and Central Europe, reaching the Baltic sea around 2500 B.C. A rapid change in pottery ornaments and axe forms is to be observed. Amphoras, pots and bowls are now decorated with imprinted cord ornaments, which gave their name to the whole culture: the Corded Ware culture.

The Indo-European culture brought by the invaders to the Baltics assimilated the local Nemunas and Narva cultures, and a new culture, the Pamarian (Rzucewo or Haffküstenkultur) Corded Ware culture appeared (Figure 3). People of this culture are direct ancestors of the Baltic nations. Other related cultures of that time were

the Dnieper culture living in the upper Dnieper area and the Fatyanovo culture in the upper Volga area. Over a large part of these two areas, numerous place names and hydronyms of Baltic origin are still to be found.

The Baltic parent language was formed at that time; later on it split into Prussian, Lithuanian, Latvian, and other languages and dialects. However, these Baltic languages preserved many archaisms of the Indo-European parent language.¹⁶

2. Religion and Mythology of the Ancestors of the Baltic Nations

Assimilation of local people by the immigrants resulted in a somewhat compact culture with a specific religion and mythology. According to Gimbutienė,¹⁷ female deities of the Balts originated from the peaceful Nemunas and Narva cultures; they are characterized by their chthonic nature, their close relationship with water, earth and the Moon, and they have life-generating powers. Male divinities, on the other hand, show predominantly the elements of the war-oriented Indo-European culture

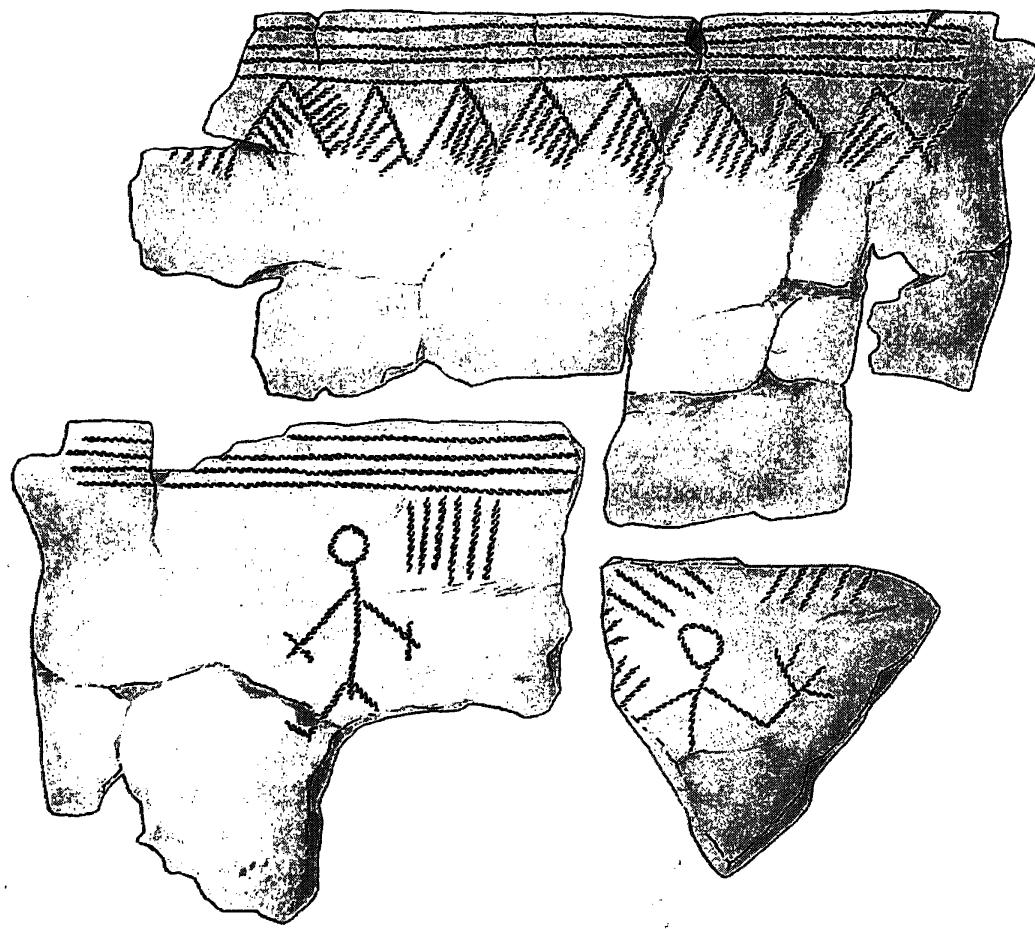


FIG. 4. The agricultural aspect of the Pamarian culture (see text).

for they represent fire, light, thunder, and heavenly bodies.

Simultaneously with the Indo-European invasion, desacralization of the world was taking place. Earlier, all nearby trees and waters were populated by spirits, and the dead were buried near the habitation sites; now the after-world turned into an abstract “lagoon” or “heaven” and is located somewhere far away, *už¹⁸ devynių upių* (across nine rivers), *už devynių kalnų* (over nine mountains) or underground. The surrounding world is set free for human activity, since the world of the dead becomes set off first by a stone circle of the burial mound, then by a gravestone and, finally, by a cemetery wall.

It is quite probable that by that time (2000–1500 B.C.) the Pamarians and other Baltic ancestors already had rich cosmological views and mythology. However, the culture of the local farmers and hunters affected to some extent the mythology of the cattle-breeding immigrants. The agricultural aspect of the Pamarian culture is evident in pottery ornaments (Figure 4) found in excavations of the Nida settlement dated 1700–1500 B.C. and described by Rimantienė.¹⁹ Nida pottery decorations are very close in type to the drawings of the Dnieper farming culture dated 4000–2000 B.C. and interpreted by Rybakov.²⁰ According to him, the horizontal lines drawn on pot necks represent unlimited supplies of the heavenly waters. The clusters of vertical or oblique lines falling down from the horizontal lines depict rain that waters the fields and nourishes the crops and animals. Under the rain are the men standing with upraised hands in a position of worship or ecstasy.

Water is of exceptional importance in the cosmological myths of many nations. It is present for example in the oldest Lithuanian tales and folk-songs, a large collection of which has been recorded and is housed in the folklore archives.²¹ According to these tales, in the beginning there were darkness and chaos, the land being mixed with water. In the vast expanses of chaos wandered the God, who began to divide the universe into the separate elements: water, earth, air and fire. Almost all Lithuanian legends feature two divinities, the highest god and, assisting him, the younger god, in some legends called his brother, in others, *velnias* (a devil). Water seems to be the first element to be isolated from chaos, and it formed lagoons. By order of the highest god, the younger god dived many times to the bottom of the lagoon and brought to the surface the seeds from which grew the earth.

3. The Concept of the World-Tree

Alongside myths describing the origin of the world, the world's schematic symbolic representation appears. Many nations, especially Indo-Europeans, have the notion of the World-Tree (Figure 5). Some nations call it the Cosmic Tree or the Life-Tree. The vertical structure of the World-Tree, and thence the world model, as represented in the Lithuanian folk painting, was analysed in detail by Dundulienė²² and Vėlius.²³ The World-Tree usually is shown as a powerful tree with wide-spread branches, with its top reaching heaven and its roots going deep into the earth. The tree-top is the dwelling place of heavenly bodies and eagles, while in its branches

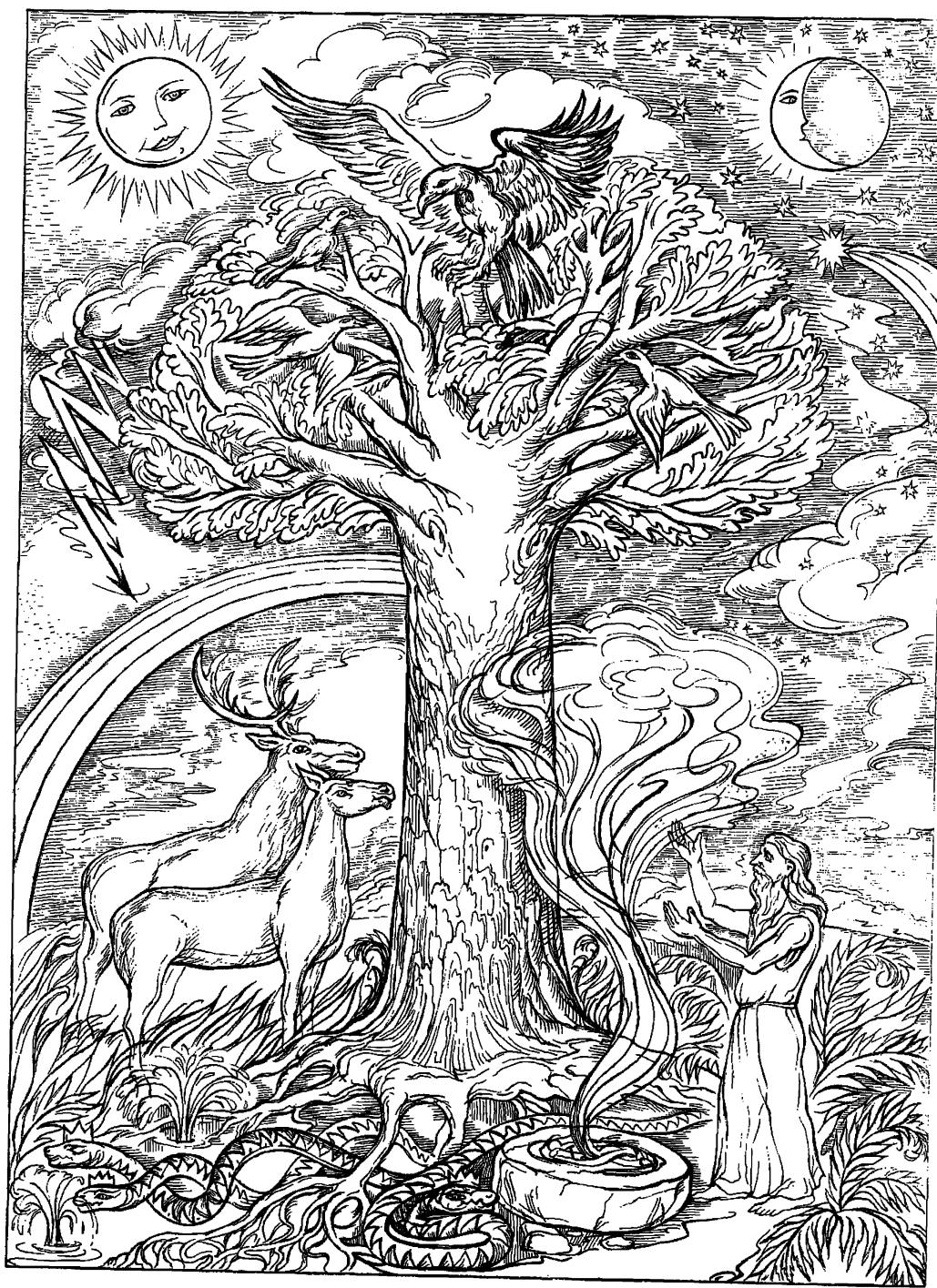


FIG. 5. The World-Tree (artist's painting based on folklore information).

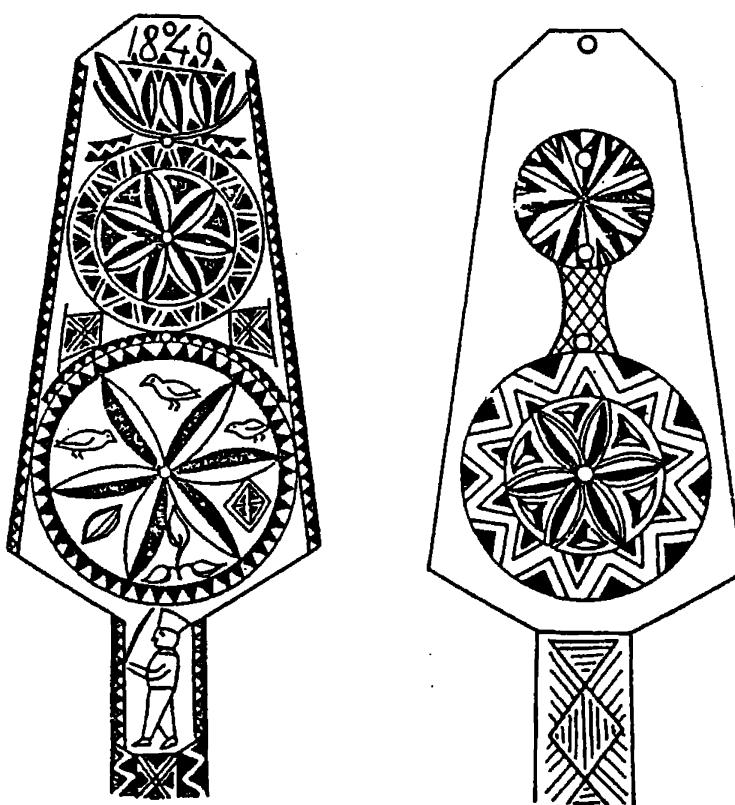


FIG. 6. A distaff decorated with symbols of its cosmological meaning.

live other birds; under the tree are men and animals, and still lower is the dwelling place of snakes and other reptiles. From under the roots spurt springs of life and wisdom. Thus, the World-Tree represents the world as an indivisible entity, uniting the three spheres: the heaven, the earth and the underground. The mythical imagery of the Baltic World-Tree is probably a reflection of the holly oaks and ash trees, or so it appears from folk-tales.²⁴

The World-Tree is a widely spread image in Lithuanian folk painting, and some hint of it is also found in Lithuanian and Latvian folklore. It is frequently engraved or painted on objects in daily use among peasants: dowry chests, cupboards, towel holders, distaffs, laundry beaters, crochet works, and so on (Figure 6). Wood engravings of the World-Tree sometimes contain two segmental symbols of the Sun, surrounded by a circle of stroked squares, triangles and rhombs, the latter being symbolic imagery of the tilled earth and sowed fields. The upper Sun shines in the daytime and gives warmth, while the lower one was believed to cross the underground lagoon from the west to the east in a small boat, bringing dew to grass and crops.²⁵

The oldest grave monuments in Lithuania are wooden *krikštai*, made from a board with incisions in the form of a tree. They used to be erected at the feet of the dead

man, perhaps in the hope of facilitating his entry into heaven. To the World-Tree imagery also belong Lithuanian memorial crosses and wooden roofed poles (chapels). Such roofed poles used to be (and still are to this day) erected at farmsteads, by roadsides and in cemeteries. They may have originated from the ancient ritual poles at which sacrifices were offered to gods.²⁶ The idea of such sacral objects is to direct the path of the prayer towards the dwellings of gods. Very common are three-storied roofed poles, where each storey represents a separate sphere of the World-Tree.²⁷

Each pole has the following elements: (a) a metal top with the symbols of heavenly bodies; (b) a small chapel with a wooden statuette of a god; and (c) a lower part framed by snake-shaped supports (Figure 7). The dwellings for the gods of the Samogitians (a Lithuanian ethnic group living in western Lithuania near the coast of the Baltic sea) used to be erected on top of a pile of stones or fixed to a separate huge round boulder. The stone was a symbolic border between the living world and the underground world of the dead.²⁸

The upper part of every roofed pole is a filigree forge-work with symbols of heavenly bodies. In this symbolism we can distinguish three ideas: the unity of the heavenly and earthly fire (the encircled cross); the ties between the Sun and vegeta-

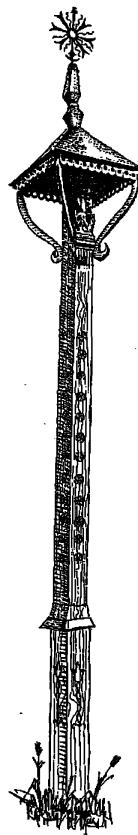


FIG. 7. A roofed pole near the Molėtai Observatory in Lithuania.

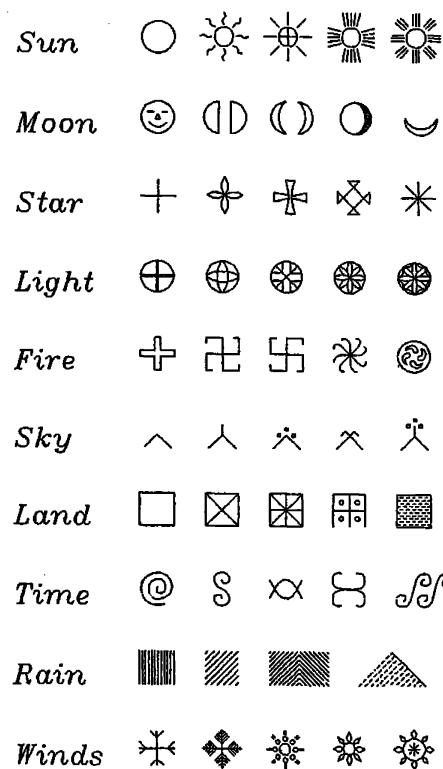


FIG. 8. Symbolic representation of heavenly bodies and atmospheric phenomena used by the Balts.

tion (the Sun rays ending in plant leaves); and the flow of time (the three phases of the Moon). Below the symbol of the Sun there is an image of the boat in which the Sun, having set in the Baltic sea in the evening, goes back from the west to the east, across the underground lagoon, in order to rise again in the morning for another day's journey across the sky.

4. Astronomical Symbolism in Folk Painting

A symbolic representation of the Sun, Moon, stars and other celestial phenomena can also be identified in folk-art artifacts of wood and crochet pieces. The same archetypes have been preserved over millennia, as confirmed by grave finds of amber, bronze and iron artifacts and also ornaments and crochet works used in the garments of the dead. In Figure 8 we see the symbolic representation of some heavenly bodies and of atmospheric phenomena.

The symbols of the Moon and its phases in the ornaments of wooden, metallic and crochet artifacts imply the flow of time, and so are a first step to the calendar.²⁹ Of particular interest is the cyclic repetition of the three phases of the Moon alongside other symbols, observed in the Baltic woven patterned sashes. These sashes were used to girdle an infant at its christening or an adult on occasions when one

individual was extending his best wishes to another member of the community. The sash symbolizes the continuous flow of time and indicates wishes for long life. This interpretation is strongly supported by Mara's sash (Figure 9), a well-known Latvian object made in the eighteenth century. It has 49 different symbols; these correspond to the number of the phases of the Moon in a year, so that the sash is a form of lunar calendar.³⁰ In this calendar the year starts with the spring, that is, with the beginning of the new life cycle of nature. The main holidays of the year are denoted by special signs. A Lithuanian version of such a sash exists, with twelve symbols. The sequence of symbols in a sash is called in Lithuanian *raštas*. The same word is used to denote the idea of 'writing', and so the ornament of a sash can also be understood as possibly the remains of a pictographic writing used long ago.³¹

Along with the symbols of heavenly bodies and atmospheric phenomena, more complicated geometric patterns, cosmograms, are observed in woven sashes and also on the decorated Easter eggs (Figure 10). In the centre of such a composition sometimes we see a square, the sacral space, one's own village or the native farmstead. At times the square is stroked, symbolizing the sown land. In Lithuanian folk songs this sacral space is termed *tėvelio dvaras* ("daddy's manor"). From the central square, four perpendicular arms, drawn in the form of a tree, stretch out to the four directions of the world, as a sort of projection of the World-Tree in the horizontal

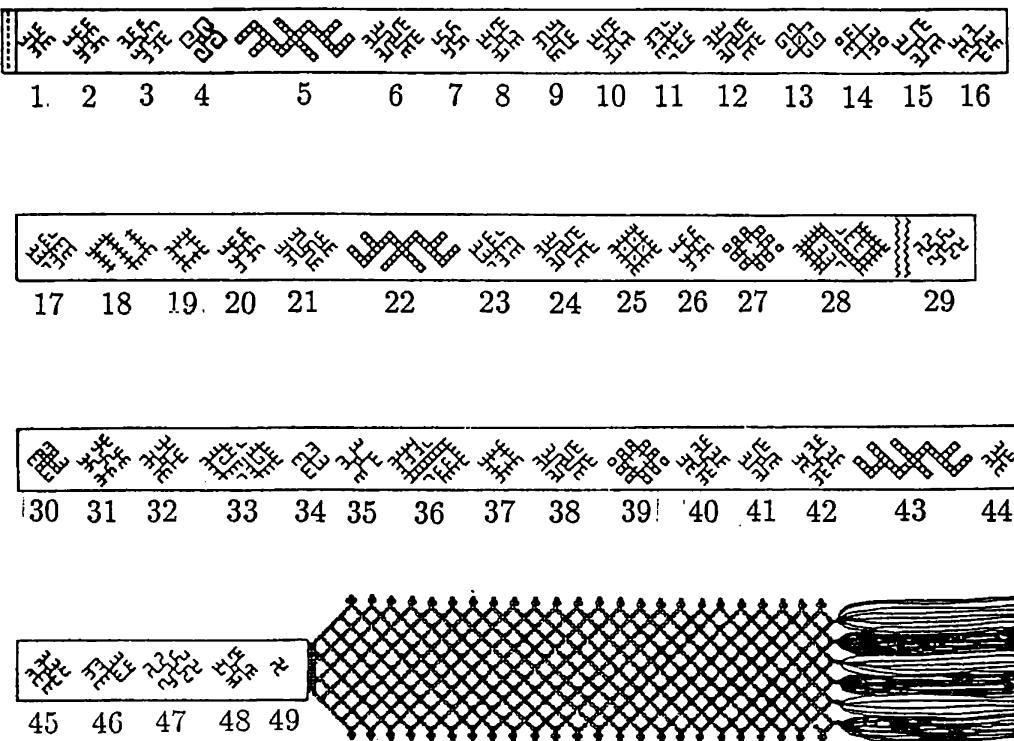


FIG. 9. The Latvian Mara's sash (fragments).

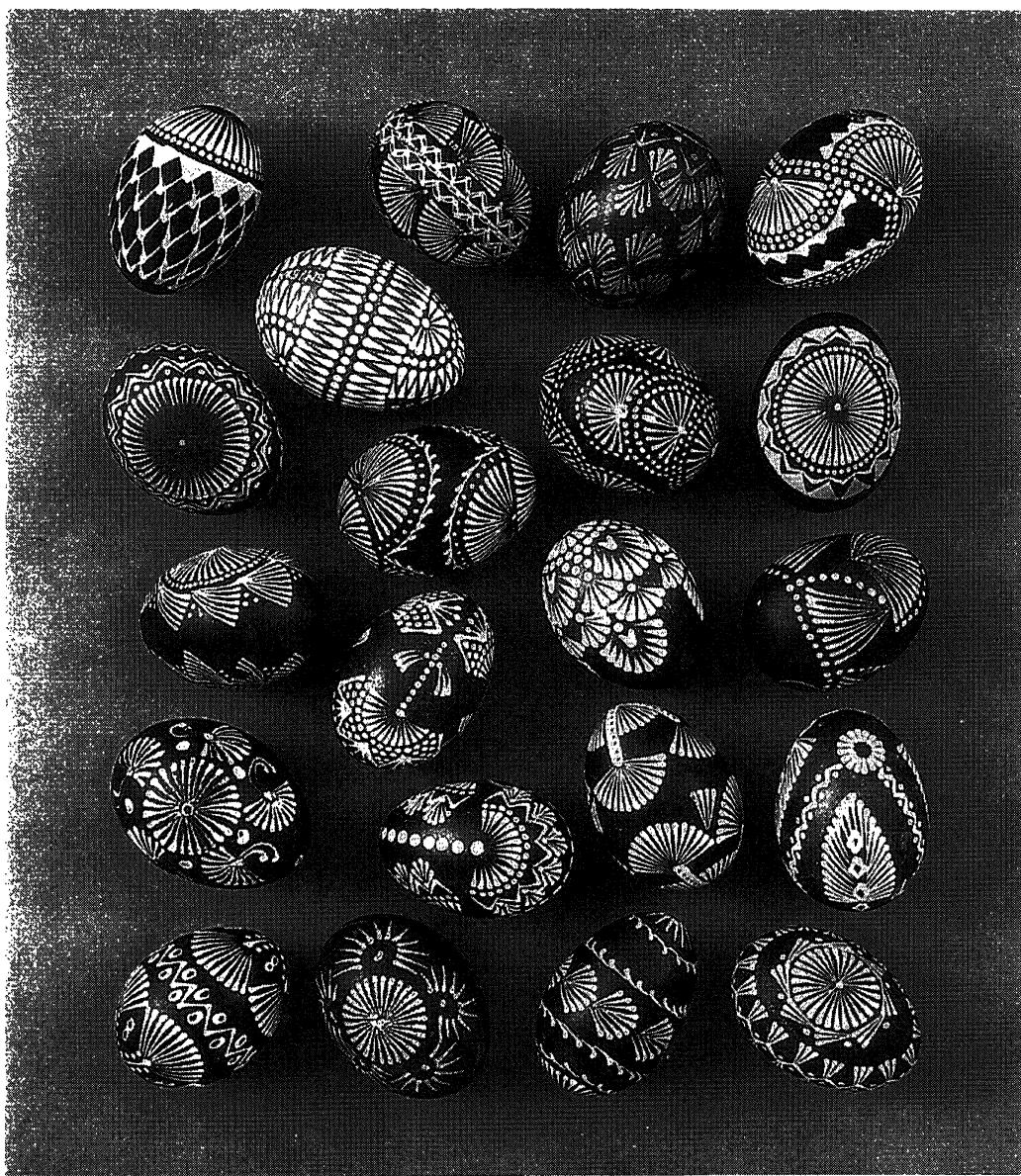


FIG. 10. A collection of decorated Easter eggs.

plane. Square corners point to the other four directions which, in the Baltic area, correspond to the extreme azimuths of sunrise and sunset on the days of the solstice.³²

In the textile patterns such a cosmogram, or *Auseklitis*³³ (Figure 11) is strongly geometrized and, therefore, less obvious. This very pattern has recently been chosen as a symbol of the Latvian national rebirth. A somewhat similar symbol, called *Laumēs kryžius* ("the Witch Cross"), has been used by Lithuanians for the protection of buildings from the evil spirits.

Another cosmogram, also associated with the Sun's journey across the sky, is

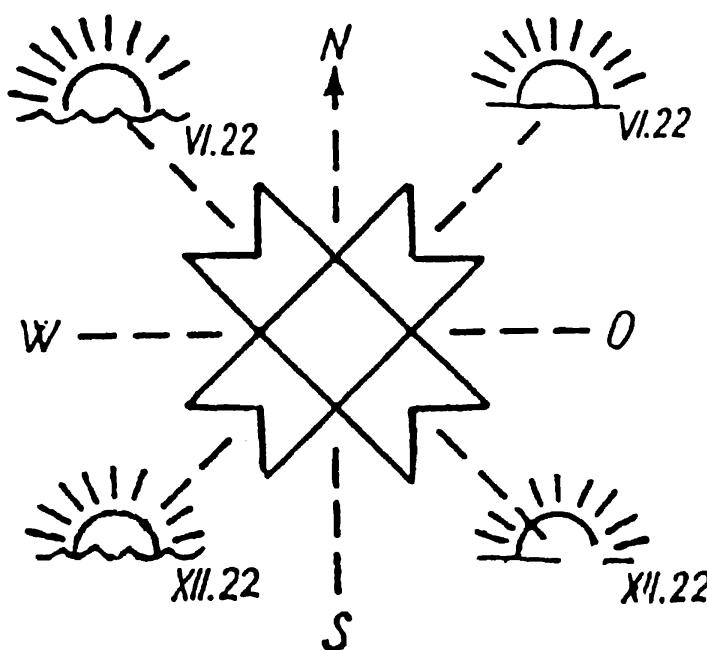


FIG. 11. The Latvian cosmogram *Auseklitis* with astronomical interpretation of the world directions (from Klimka, *op. cit.* (ref. 29)).

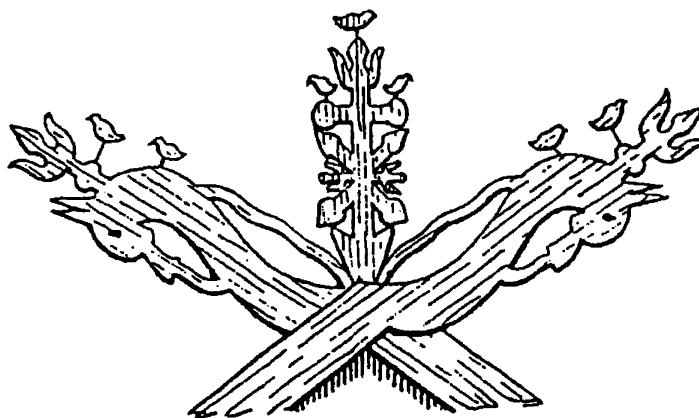


FIG. 12. The "twin-horses" cosmogram, a wooden gable of a Lithuanian house.

called *žirgeliai* ("the stallions"). It is a triangle whose sides have bent extinctions at the top. The origin of this symbol is related to the gable decorations of a Lithuanian house where the bent extinctions closely resemble horseheads (Figure 12). These are the mythical twin horses, *Ašvieniai*, which draw the Sun's chariot across the sky all day long. In this the Baltic mythology shows a striking coincidence with the Indo-Aryan Vedic imagery (Aswins). This suggests that *žirgeliai* may be a 3000-year-old relic. When used in ornaments, this symbol may mean the world roof, i.e. the sky.

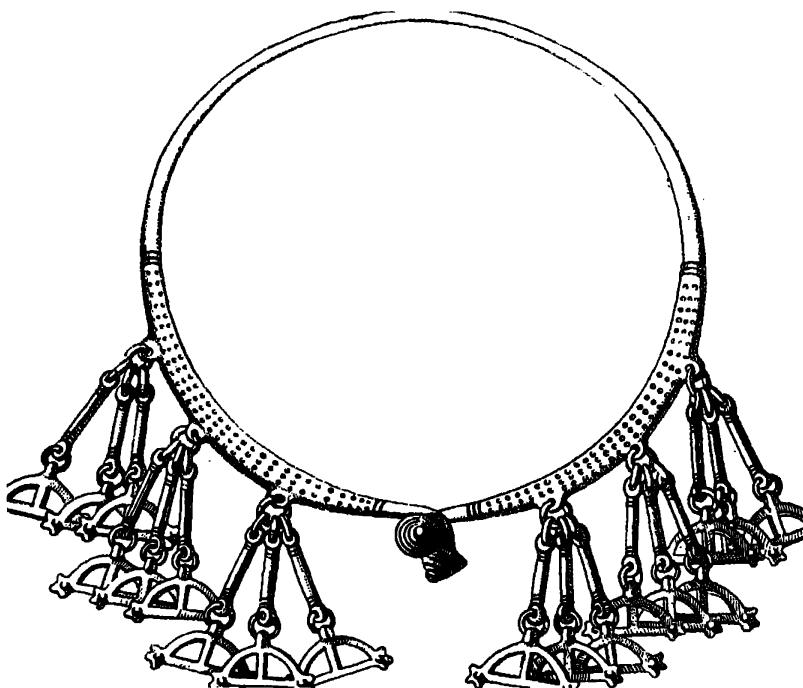


FIG. 13. A bronze necklace used by a Baltic woman 2000 years ago.

5. Natural Rhythms, and Calendars

Relics of a lunar calendar are quite abundant in the Lithuanian and Latvian ethnography. A custom remains to our day: upon seeing the new crescent Moon, one addresses it as *kunigaikštis* ("duke") or *dievaitis* ("young god") and begs for good health.³⁴ The four phases of the Moon are considered important for the beginning of most farm work, especially sowing and planting.³⁵

The magic numerals 3, 7, 9, 18 and 27, so frequent in the Lithuanian folklore, may be related to the archaic lunar calendar. It is quite probable that the oldest numeration in the history of mankind was trecimal. Strokes or dots that make the ornaments of Neolithic ceramic artifacts are often grouped in triads. The number 3 and its multiples are found in many Lithuanian folk songs and legends, and even ritual formulas acquire their magic power only when repeated thrice. A drink boiled from a mixture of herbs gathered on an early morning of Midsummer Day (summer solstice) from three fields in bunches of nine different herbs has particular magic properties. Historical records provide evidence that the week of the ancient Balts was nine days long. The sidereal month must therefore have been divided into three parts. It is quite probable that a similar week is represented by a deer with nine horns, a popular character of the Lithuanian Advent songs. Trecimal numbers and crescent-shaped pendants have been found on a bronze necklace excavated in a 2000-years-old Baltic grave (Figure 13).³⁶ On each side of the artifact there are repeated groups of 3 and 9.

The solar calendar appeared on the Baltic territories with the introduction of an agricultural economy, in the third millennium B.C. Flat amber disks which are divided into quarters by sequences of pits, found in the Nida and other settlements, are considered to be the first amulets of the solar magic, the rudiments of the annual solar calendar (division of a year into the seasonal quarters).³⁷ The texts of Lithuanian folk songs suggest a possible existence of a ten-month (300-day) calendar which may have embraced only the warm period of the year when farm work was in progress. With the evolution of a solar calendar, the lunar cycle was incorporated into the solar year, which resulted in calendars of solar-lunar form.

The oldest Baltic cosmological schemes, calendaric in form, found on the burial urns dated 600–200 B.C., are today in the Gdansk archaeological museum in Poland.³⁸ Splendid 12-month calendars, engraved on pottery and dating back to the beginning of the Christian era, were found near the borders of the Baltic region, in the present territory of the Ukraine.³⁹ In the fourteenth century the Grand Duchy of Lithuania used a soli-lunar calendar, whose structure was understood with the help of the so-called Duke Gediminas Sceptre discovered in 1680 (Figure 14).⁴⁰ The sceptre indicates that the year started in April and normally had 12 months varying from 29 to 31 days. Every month started with the new Moon. The months have

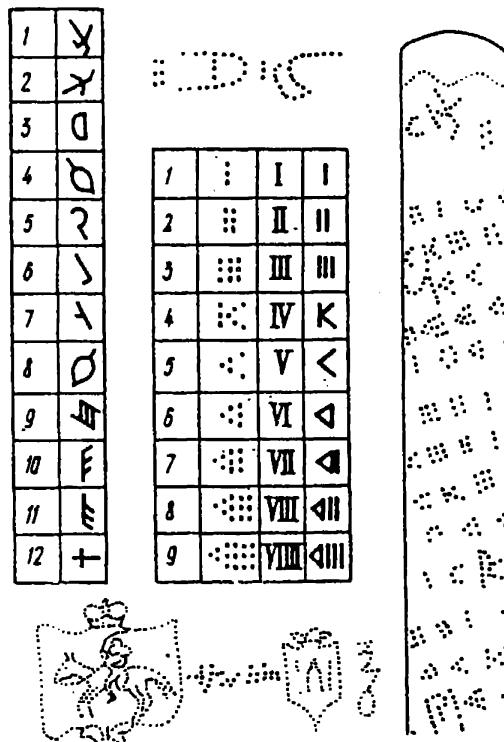


FIG. 14. The so-called Duke Gediminas Sceptre calendar used in Lithuania in the fourteenth century. From right to left: general view of the sceptre, designations of 9 days in a week, designations of the 12 months.

unique Lithuanian names, expressed in symbols, which reflect natural phenomena and agricultural activities.

The Balts were familiar with the times of equinox and solstice and marked them with festivals.⁴¹ The summer solstice was celebrated as *Rasos* or Dew (Midsummer Day), which after the introduction of Christianity became the feast of John the Baptist. The winter solstice (almost) coincides with Christmas. The spring equinox festival of *Gavēnia*, under Christian influence, turned into *Užgavēnės* (Shrove-tide), farewell ceremonies for the long winter. The autumn equinox festival *Ilgės*, marking the end of harvest, merged later on with the Christian All Saints' Day and became *Vēlinės* (The Day of Souls).

Three centuries ago Praetorius⁴² recorded the Lithuanian names for the parts of day and night, and this can be considered a type of folk clock. Day and night were divided into 16 parts, starting with the early morning and ending late in the night. Later, Daukantas⁴³ listed the names of 24 parts of day and night; most of these names are still in use, although their practical significance is long lost. In Lithuanian there also exist separate terms to denote day (*dieną*), night (*naktis*) and day and night (*para*).

6. Heavenly Bodies and Phenomena in the Baltic Religion

In the Grand Duchy of Lithuania pantheistic religion was preserved until the end of the fourteenth century, which means that Lithuanians were the last pagans in Europe. Because of this, many Baltic gods are described in folklore, chronicles and books, and this allows us to reconstruct details of the religion of the ancient Balts. Their mythology and the pantheon of their gods are important comparative sources for the better understanding of other pantheistic Indo-European religions.⁴⁴

Historical records and folklore survivals have preserved the names and functions of about 120 Baltic gods and goddesses,⁴⁵ some of them related to heavenly bodies and phenomena. The highest Lithuanian god, the creator of the world, was called *Praamžius*, *Satvaras* or *Prakurimas*, and sometimes simply *Dievas* ("the God"). The word *Dievas* has Indo-European connections since similar words can be found in other Indo-European languages: *Dyaus* in Indo-Aryan, *Zeus* in Greek, *Deus* in Latin, etc. The highest god of the Old Prussians (a Baltic people, the Lithuanians' western neighbours, who were assimilated by Germans in the eleventh and twelfth centuries) was *Okopirmas*. Probably as early as in the Neolithic, the personified heavenly bodies appear: *Saulė* (the Sun) and *Mėnulis* (the Moon) as well as the planets, the Sun's daughters: *Aušrinė* (the morning Venus), *Vakarinė* (the evening Venus), *Indraja* (Jupiter), *Selija* (Saturn), *Žiezdrė* (Mars) and *Vaivora* (Mercury). The interpretation of the names of the last four planets has been arrived at by Slavėnas⁴⁶ on the basis of mythological materials. Moreover, several folk-tales and songs say that *Žemė* (the Earth) is the Sun's eldest daughter. It should be noted that, in contrast to many nations, the Lithuanians had mythical imagery of the Sun as a goddess and the Moon as a male god. The same applies to gender usage in modern

Lithuanian: 'sun' is feminine and 'moon' masculine. Furthermore, all the planets are given feminine names. In some folk-tales, Venus is called *Marių Žvaigždė* (the Sea Star) and Mercury is *Aušrinės Tarnas* (Morning Star's Servant). In Latvia, the morning Venus is called *Auseklis* and the evening Venus is *Rieteklis*.

Saulė (the Sun) was imagined as a beautiful goddess of the sky who lives in a palace somewhere away to the east. Every morning she drives across the sky in a brilliant chariot of gold, copper or fire, pulled by two white horses. In the evening the chariot goes down into the Baltic sea and *Saulė* changes the chariot into a golden boat which takes her across the sea. The boat is steered by the goddess *Perkūnėlė* who bathes the tired and dusty *Saulė* and sees her off, the next morning, refreshed and shining for a new journey through the sky.

Mēnulis (the Moon) was a young god, dressed in silver attire, *Saulė*'s husband. He had fertile, vitality-giving functions and was the guardian of night and time. Rich mythological imagery was connected with the four phases of the Moon, as this was considered of vital importance to animals, plants and the weather. One interesting tale tries to explain the solar eclipses: the Sun and the Moon are kissing each other; they cover themselves with a wrap, trying not to be seen by their daughter, the Earth.

Myths speak of *Vakarinė* (the Evening Star) who made the bed for *Saulė*, and about *Aušrinė* (the Morning Star) who burnt the fire for *Saulė* and made her ready for another day's journey. *Aušrinė* was a maiden of remarkable beauty with golden hair and an image of the Sun on her crown. She wore a starry mantle with a moon-shaped brooch on her shoulder and was often considered to be even more beautiful than the Sun herself.

One of the most important sky gods was the god of thunder and all storms, *Perkūnas* (the Thunder), fecundator and cleaner of the earth from the power of evil (Figure 15). He was imagined as a stern, bearded and powerfully-built man who traversed the sky in a fiery chariot, drawn by swift horses or as riding a fiery horse. His head was surrounded by a wreath of flames. In one hand he held lightning bolts and, in the other, a heavy stone axe. Nine festivals dedicated to *Perkūnas* were celebrated throughout the year, starting in the early spring. Figurines of *Perkūnas* have been found in the Kernavė settlement, in the so-called *Perkūnas* house in Kaunas, and elsewhere.

An interesting folk-song involves the Sun, the Moon, their daughter *Aušrinė* (the Morning Star) and the god *Perkūnas*. We present it as written by Balys.⁴⁷ Nowadays the Sun and the Moon, the heavenly couple, are divorced, and they never rise and set together. The cause of their enmity is explained as follows. The Moon married the Sun in the primeval spring. Because the Sun rose early, the Moon separated and walked alone. He met the Morning Star and fell in love with her. Then Thundergod *Perkūnas* became angry and punished the Moon by striking him with his sword. The Moon's face, therefore, often appears as cut in two pieces. *Perkūnas*'s sword is probably a comet.

Among the most important Prussian gods is *Swayxtix*, or in Lithuanian *Žvaigž-*



FIG. 15. The flag of the Old Prussians with three principal gods: Perkūnas, the god of thunder (centre), Patrīmpas, the god of spring and fertility (right), and Pykuolis, the god of the dead and underground (left). The script is in Old Prussian (from S. Grunau, *Preussische Chronik*, ed. by W. von Perlbach, i (Leipzig, 1876)).

dikas, the god of light. In Lithuanian mythology, he is imagined as a horseman with a sword.

Other deities related to celestial phenomena were the sunrise goddess *Aušra* (sometimes *Auska* or *Brēkšta*) and the evening dusk goddess *Žlēja*. Atmospheric phenomena were portrayed as a family of wind gods: *Vejopatis*, *Audrupatis*, *Bangpūtys*, *Gardaitis* and *Divytis*. They lived in a cave on the bottom of the sea.

To the present day, Lithuanians and Latvians have preserved names denoting winds of eight (or even more) directions:

	In Lithuanian	In Latvian
N	Šiaurys, Žiemys, Žiemelis	Ziemelis, Sivenis
NE	Aušrinis, Audenis	Austrenis, Tukšais
E	Rytys, Saulinis, Žeminis	Zemenis, Makars, Krasta vejš
SE	Ožinis	Azenis, Launadzis, Sausenis
S	Piety, Launagis, Peitvis	Vasaris, Jedals, Tarpenis
SW	Aulaukis, Šakšinis, Pilvinis	Saksenis, Lenits, Udens vejš
W	Vakaris, Jūrinis, Marinis	Jūrenis, Vežgeris, Plūdenis
NW	Suominis, Vakarinis	Samenis, Luodis, Pūmenis

Other high Baltic gods should be mentioned: the great mother *Žemyna* (or in Latvian *Zemes Mate*), the goddess of the earth and fertility; *Patrīmpas*, the god of spring and fertility, the guardian of rivers and springs; *Antrīmpas* and *Andojas*, the sea gods; and *Pykuolis* and *Velinas*, the underground gods. In Latvia, other gods,

related with the sky objects, are known: the highest god *Dievu Dievs* or *Vecais Tevs*, the god of the Sun and the morning light *Usinš*, *Dieva Deli* ("God's Sons") and *Saules Meitas* ("Sun's Daughters").

For worship of gods and goddesses, the Balts erected temples or sanctuaries that have since been excavated in the mounds of Tushemlia and Gorodok on the Sozh River, now in Russia (third–fourth centuries A.D.),⁴⁸ on the Blagoveshchensk hill on the Desna River near Briansk, now in Russia (fifth–sixth centuries),⁴⁹ in the Bačkininkėliai mound near Prienai, Lithuania (first–fifth centuries),⁵⁰ and elsewhere. From later periods the Romovė temple in Prussia, the Perkūnas temple in Vilnius, and the supposed goddess of love Milda temple near Kaunas are among the better known.

An analogy is easily drawn between the Baltic mythology and the mythology of Indo-Aryans, Greeks, Romans and other ancient peoples. Even the names of certain gods are similar. No doubt, the northern and southern nations were in touch as early as 2000 B.C., as evidenced by finds of Baltic amber in Crete, Troy, Egypt and other countries of the Mediterranean. Evidence of direct contact is established by the writings of Hecataeus of Miletus and Pindar (fifth century B.C.) and Herodotus (fourth century B.C.) who mention the Hyperboreans who lived north of the Scythian tribes. The Hyperboreans were said to have the same religion as the Greeks, and their land was considered the birth-place of titaness Letona (Leto), mother of the twin-gods Artemis and Apollo. Apollo visited his homeland every year and spent the winter months there. Rybakov,⁵¹ after analysing existing historical sources, concludes that the Hyperboreans of the sixth–fifth centuries B.C. were Baltic tribes.

7. Astronomical Knowledge

Since the zodiac is now viewed as the product of the Indo-European culture,⁵² it is quite probable that the Balts were familiar with it from a very early date. Lithuanians were well acquainted with the twelve zodiacal constellations through which the Sun makes its annual journey. The Rivius chronicle⁵³ says that in the thirteenth century A.D. in the Šventaragis valley, at the confluence of the Neris and Vilnia rivers, there stood a Perkūnas temple which had twelve steps, each with an altar. Every month in turn, holly fire was burnt on one of the twelve altars. The latest archaeological excavations in the basements of the Vilnius Cathedral completely confirm this report.⁵⁴ However, the ancient Lithuanian names of the zodiacal constellations probably have not survived to the present day. Their names as recorded in the seventeenth century by M. Sarbiewski⁵⁵ appear to be translations from Latin. It is interesting to note that in Lithuanian the planets are called *žvėrynės* (from *žvėris*, the beast). This probably is because planets always move along the zodiac, the beast circle.⁵⁶

We also have a collection of unique Lithuanian constellation names which were recorded in Lithuanian dictionaries by K. Sirvydas (C. Sywid, 1620), P. Ruigys (P. Ruhig, 1747), K. Milkus (Ch. G. Mielcke, 1800), G. B. F. Nesselmann (1851), F. Kuršaitis (F. Kurschat, 1868–74), A. Juška (A. Jushkevich, 1897) and W. Kalwaitis

(1888–94, published 1910). Some of these names are still in use. These are:

Lithuanian Name and Translation	Latin Name
Gr̄žulo Ratai (Big Cart)	Ursa Major
Perkūno Ratai (Thunder's Cart)	Ursa Major
Kaušas (Dipper)	Ursa Major
Gr̄žulo Rateliai (Small Cart)	Ursa Minor
Juostandis (Belt)	Cassiopeia
Kulējai ir Spragilas (Threshers and Flail)	Perseus?
Kelias į Bažnyčią (Path to Church)	Andromeda
Bažnyčia or Stalas (Church or Table)	Pegasus
Gr̄ebéjos (Rakers)	Taurus and Auriga?
Sietynas or Sietas (Lustre or Bolter)	Pleiades
Dievo Darželis (God's Garden)	Hyades
Šienpjoviai (Haymakers)	Orion
Trys Sesutės (Three Sisters)	Orion Belt
Artojas (Ploughman) ir Jaučiai (Oxen)	Leo and Gemini?
Žagrė (Plough)	Cancer?
Bičių Spiečius (Swarm of Bees)	Praesepe
Valgio Nešėja (Food-bearer, feminine)	Virgo
Sējikas (Sower)	Bootes and Coma Berenices?
Darželis (Flower Garden)	Corona Borealis
Dangaus Svarstyklės (Heavenly Scales)	Lyra-Cygnus-Aquila
Paukščių Takas (Way of Birds)	Milky Way
Gervių, Žasų Takas (Way of Cranes, Geese)	Milky Way
Vėlių Kelias (Road of Souls)	Milky Way

The surviving names of the brightest stars are less numerous: *Šiaurinė* (the North Star), Polaris; *Perkūno Ožka* (Thunder's Goat), Capella; *Tikutis* (no translation), also Capella; *Mergelė* (the Maiden), Spica, and *Skalikas* (Hound), Sirius. There are also star names that are as yet unidentified.

Similar (or identical) names of some constellations are still in use by Latvians.⁵⁷ The great number and originality of these names of constellations, stars and planets demonstrate that the ancestors of the Baltic nations were well acquainted with the starry sky.

Other celestial objects and phenomena have specific Lithuanian names. Comets are called *dangaus rykštės* ("the sky rods"), Aurora Borealis are *gaisai* or *pamėnai* ("the glow"), circles around the Moon are *drignės*, meteors are *krintančios žvaigždės* ("the falling stars"). Every person was believed to have his (or her) own star in the sky. When the person died, his star fell down. According to another version, a meteor is a mythological creature *aitvaras* that flies in the air bringing wealth to his owner. The rainbow (*vaivorykštė* or *Vaivos juosta, drignis*) is a frequent character in

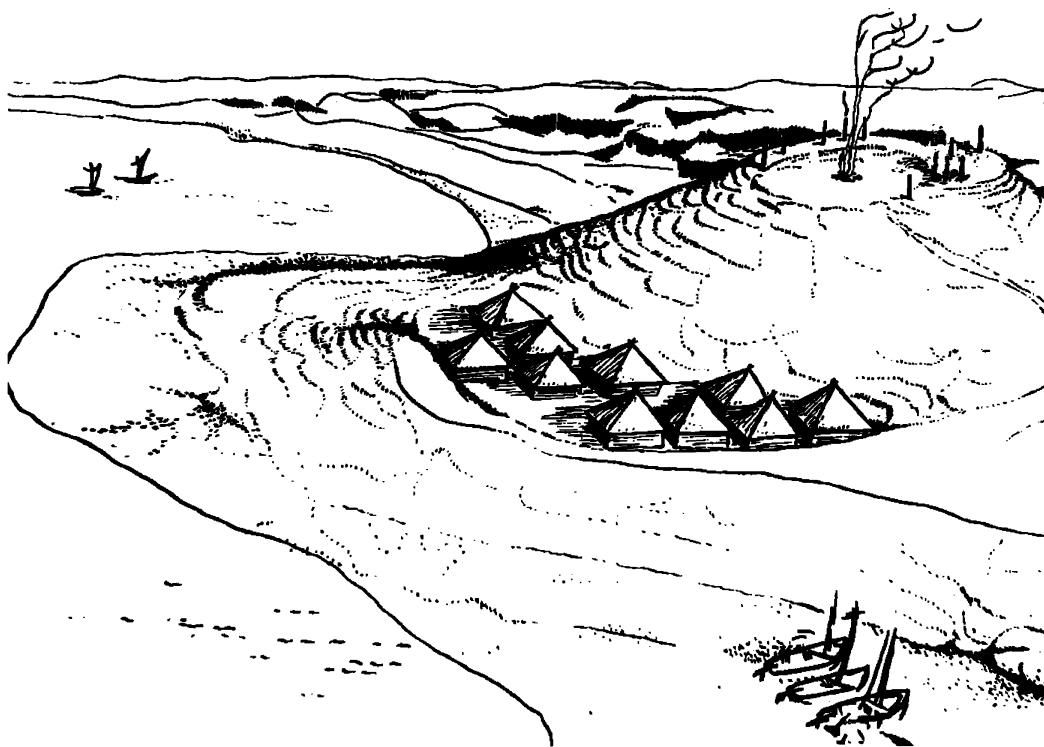


FIG. 16. A pole observatory on the Birutė hill in Palanga, near the Baltic sea (reconstruction).

mythological tales. The sky in Lithuanian is *dangus*, from the verb *dengti* ("to cover").

It is quite possible that specific Lithuanian constellation names have survived to the present, as some constellations may have the same names as in Latin or Greek, i.e. pre-historic Indo-European names. These names could have been brought to the Baltics from Asia Minor or northern Mesopotamia around 2500 B.C. by the people of the Corded Ware culture, which would explain the appearance in the Lithuanian sky of Lion, Dolphin, Scorpio and other southern creatures. The strange frequency of lion (*liūtas, levas*) in the Lithuanian folk-tales, noted by Basanavičius,⁵⁸ could be explained in a similar way.

In adjusting the solar and lunar calendar cycles, accurate celestial measurements and hence special equipment would be required, as well as persons skilled in its use. Historians such as M. Praetorius, A. Rotund, M. Stryjkowski and T. Narbutt present evidence that the motions of heavenly bodies were being observed by special prophets (men and women) called *žvaigždininkas* ("a star man") or *krivis* ("a priest"). The observations were needed to construct the calendar, to predict important astronomical events, and to appoint the time for sacrificial rites. Crusader chronicles mention the Prussian prophets called *tullisones* and *ligaschones*.⁵⁹ The prophets used to take part in burial ceremonies, when they observed the riding of souls on horseback across "the middle of the sky". Cardinal Peter d'Ailli, who visited Lithuania in 1418,



FIG. 17. The signs of the Sun, the Moon and a star on the Valiulis boulder of three metres diameter in the Molėtai district, Lithuania.

mentions that he saw there skilled astronomers who were managing the calendar.⁶⁰

Rudimentary observatories were erected in certain places. For instance, the Rivius chronicle⁶¹ mentions a round tower for observation of stars and the Sun, built in 1263 by Duke Gerimantas in the Šventaragis valley in Vilnius, near the Perkūnas temple. A pole observatory once existed on the Birutė hill in Palanga, near the Baltic sea.⁶² This consisted of a horseshoe-shaped sand embankment with eleven posts inserted in the ground. The pairs of posts marked important azimuths of the Sun and the Moon when setting across the sea (Figure 16). Solar azimuths at the days of summer and winter solstices as well as lunar extreme azimuths during the Metonic cycle were represented.

Sometimes stones were used to mark the positions of heavenly bodies on the horizon. For instance, at the site next to the Purmaliai mound near Klaipėda have been found seven huge boulders, arranged to mark astronomical directions.⁶³ On the day of summer solstice, the Sun rose like a "golden crown" (quoted from a folk song) over the biggest boulder. Over other boulders it rose on the mornings of the equinoxes. Circles of stones and other regular stone configurations were common in the Baltics,⁶⁴ but today only fragmentary remains are to be found. Most observatories must have been of wooden construction and so did not survive. A number of boulders with astronomical symbols are still present in territories of the ancient Balts (Figure 17).

In addition to having calendric significance, stone circles may also have served as instruments for determining the azimuth to be used in a burial.⁶⁵ It is known that in the first four centuries A.D. in central Lithuania the dead were buried facing directly towards sunrise (men) or sunset (women). Also, many mythological stones in Lithuania are called *Mokas* (from the word *mokyti*, to teach), as if in such places young people were trained to make astronomical observations.

8. Conclusions

The archaeological finds, folklore, mythology and linguistic data that we have described, along with ancient written sources, allow us to conclude that four or even five millennia ago, the people of Old Europe who were living to the east and south of the Baltic sea — the ancestors of the modern Baltic nations — differed little in their mythological views on the world structure from their contemporaries in southern Europe, Asia Minor, Mesopotamia and northern Africa. Calendric needs and religious rites forced the best-educated people to observe the sky, to follow its periodical changes and, thus, to predict important astronomical events — the phases of the Moon, the moments of sunrise, culmination and sunset at different times of the year, the dates of solstice and equinox — and so determine the appointed dates for festivals and for the beginning of agricultural activities.

Since people were ignorant of the true causes of natural phenomena, the gods and fate were made responsible for everything. Living in harmony with the surrounding world, they adapted themselves to sometimes severe conditions of life, and transmitted their knowledge and experience down through millennia, from generation to generation.

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Note added in proof: While this paper was in press, several important books have appeared related to the same subject. All are in Lithuanian and published in Vilnius.

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